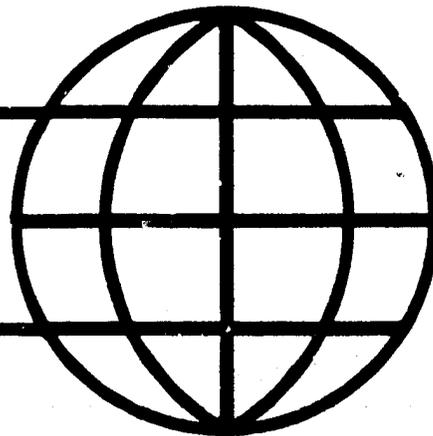


SA 60762

**COOPERATIVE AGREEMENT ON HUMAN SETTLEMENTS
AND NATURAL RESOURCE SYSTEMS ANALYSIS**



Clark University
International Development Program
950 Main Street
Worcester, MA 01610

Institute for Development Anthropology
99 Collier Street
P.O. Box 2207
Binghamton, NY 13902

PA 105311

CONTRACT FARMING IN AFRICA

Volume I
Comparative Analysis
1988

Michael Watts
Peter D. Little
Christopher Mock
Martin Billings
Steven Jaffee

This paper is published by the Institute for Development Anthropology and reports on work supported by Human Settlement and Natural Resources Systems Analysis (SARSA) Cooperative Agreement No. DAN 1135-A-00-4068-00, at Clark University and the Institute for Development Anthropology, funded by the U.S. Agency for International Development, Division of Rural and Regional Development, Office of Rural and Institutional Development, Bureau for Science and Technology. The views and interpretations in this publication are those of the author(s) and should not be attributed to the Agency for International Development or to any individual acting on its behalf.

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Acknowledgements

Several individuals deserve recognition for the assistance they provided during the course of this study. The two most important are Patrick Fleuret (currently of USAID/REDSO, Nairobi), who initiated and first managed the project for AID, and Gerald Cashion (Africa Bureau/AID), who took over project management for Fleuret when he departed for REDSO/Nairobi. Other individuals who assisted the study over the past two years are: Thomas Painter (Social Science Research Council), Bob Walter (Ohio University), David Lundberg (USAID/Nairobi), Eric Chetwynd (AID), Joseph Stepanek (USAID/ Nairobi), Professors Atsain and Eponou (CIRES, Abidjan), John Nankumba (Bunda College, Malawi), George Abalu (Amadu Bello University, Nigeria), J. Oguntoyinbo (University of Ibadan, Nigeria), Thomas Hobgood (USAID/Banjul), Ralph Conley (USAID/Banjul), Wayne Nilsestuen (USAID/Dakar), Nicola Swainson (University of Essex), Lillian Trager (Ford Foundation/Lagos), Alex Clapp and Lucy Jarosz (Berkeley), Ivan Karp (Smithsonian Institution), Robert Bates (Duke University), Michael Painter (IDA), Thomas Zalla, Michael Weber (Michigan State University), Simon Williams (Center for Rural Development), Bechir Rassas (University of Maryland), Shem Migot-Adholla (University of Nairobi), David Makanda (IDS, University of Nairobi), David Glover (IDRC), Ken Swanberg (USDA), Dan Dworkin (AID), John Grayzel (AID), Ken Kusterer (American University), Cynthia Woodsong, Cecily O'Neil, and Curt Grimm (IDA), Francis Idachaba (University of Ibadan), François Abina-Tchala (University Centre of Dschang, Cameroon), Eileen Kennedy (IFPRI), Suzette Heald (University of Lancaster), Jean-Pierre Chaveau (ORSTOM, Paris), Idrahim N'diaye (Senegal), John Keheze (Kenya), Gilbert Bintein and Didier Gand (Njoro Cannery, Kenya), and James Benson (US Embassy, Abidjan).

CHAPTER I

AN INTRODUCTION TO CONTRACT FARMING

1. Introduction

The Second Development Decade of the 1970s was rendered particularly distinctive by the emergence of two relatively new policy foci in agricultural-development circles. The first was in some measure ideological, and reflected the need to "target the rural poor." In the wake of what many saw as the potentially troubling distributional consequences of the Green Revolution, there was a powerful impulse to reach the smallholder--"the poorest ten percent"--through a variety of basic-needs and integrated rural-development projects. The small-farmer focus was not simply a poverty issue, but also raised larger questions, as articulated by Mellor (1985), on the relationships between agriculture and industry. Converting smallholder agriculture into a dynamic sector provided a source of effective demand for growth (and employment) in other sectors. The second focus was the reality of an increasingly internationalized agriculture--what Sanderson (1986) calls a new international division of labor in agriculture--in which the growth and expansion of agribusiness enterprises reshape the old vision of agriculture and development, what Vergopolous (1985) refers to as the "social integration of agriculture" and the transition from agriculture to agroindustry. Agribusiness was first articulated in the 1950s, but its maturation and development came somewhat later. As a consequence, agriculture became less an exotic reserve and more a central part of a truly transnational agricultural economy, what Williams (1985) sees as a "global drama" and "one of the major accomplishments of the twentieth century."

Contract farming has emerged in the 1980s as a potentially valuable strategy for rural transformation in Africa. Advocates promote it as a dynamic partnership between small and large private capital in which both transnationals and peasants benefit without sacrificing the rights of either party. Morrissy (1974:4) suggests, for example, that under a contracting arrangement:

The grower agrees to plant, cultivate, and harvest specified crops for delivery to a contracting processor. While preserving the autonomy of the grower, the contract provides the grower with access to technological, managerial, and marketing assistance.

Contracting can confer the advantages of: (1) technological and productivity improvement; (2) the genesis of a prosperous peasant

"middle class;" (3) the prospect of the privatization of extension services; and (4) the growth of foreign-exchange revenues insofar as contracted crops encourage a shift from import substitution to export-led growth. In some expressions of this view, it is agribusiness that provides the motor for change; to use Williams' words (1985), agribusiness is the "primary agent of change" that "transcends differences"--that is to say it provides for a relative standardization of production on a world scale--and that it "takes the risk and intends to stay."

The business view actually presents a somewhat distorted view of the extent to which other forces underlie the contemporary policy confluence on contracting. The World Bank has supported nucleus-estate and outgrower schemes since the late 1960s, particularly with respect to perennial exports such as palm oil and cocoa. These have often been implemented in association with public-sector organizations. The International Finance Corporation of the IBRD considers vertical coordination based on contracting to be "the ideal setup for agribusiness" (Peperzak 1985), and in doing so has adopted the views of the Commonwealth Development Corporation, which has had a pioneering role in the financing and management of contracting schemes since the 1950s. The Berg Report (IBRD 1981) also referred directly to contracting as an important strategy for Africa. However, this institutional popularity within the donor community should not obscure the extent to which parastatal agencies have also turned to contracting, sometimes in cooperation with transnational capital. At the very least, financial and infrastructural support from the state is a prerequisite for contract development (Goldsmith 1985), but in many cases the state directly integrates peasants into public-corporate structures. Mexico has constructed an export-oriented strategy around this contract-based state corporatism (in conjunction, of course, with private capital).

The confluence of state, private, and donor interest in contract farming is also reflected within AID. Since the early 1980s, USAID has especially focused on the overextended role of the state and the need to resuscitate what is seen as a morbid private sector by "encouraging a shift from policies which promote general import substitution to policies which open an economy to international trade" (USAID 1985:3). In conjunction with the desire for policy reform (McPherson 1985) and an agricultural focus on increased food availability, the thrust toward the private sector greatly enhanced the attractiveness of contracting as a strategic intervention in rural economies, not least in Africa. The Bureau for Private Enterprise within USAID sponsored a study to identify and evaluate agroindustrial enterprises worldwide that were structured on the principle of "satellite farming" or nucleus estates (see Williams and Karen 1985). Most of the eleven case studies in the volume covered production contracting in some form. But as the authors

acknowledge, it "does not pretend to be an in-depth, theoretical, scholarly work" (1985:11), and many of the issues explored in this report were not covered in the earlier volume.

USAID has funded a number of analyses of other local contracting schemes, especially in Central America, in order to satisfy some of the empirical shortcomings. Kusterer's work on broccoli in Guatemala and asparagus in Peru (1981, 1982) is exemplary, but again, some of the local consequences of the schemes (conflict, debt, ecological change) are treated as minor side effects, and the longer history and variability of the projects vis-à-vis peasant incomes are unclear. It was against this background that the Africa Bureau of USAID requested the Clark University/Institute for Development Anthropology Cooperative Agreement on Human Settlement and Natural Resource Systems Analysis (SARSA) to assess the nature, extent, and development implications of contract farming in Africa.

2. Terms of Reference of the Study

The objectives of the Contract Farming in Africa study, which were worked out collaboratively among the Africa Bureau, SARSA, and the Office of Rural Development, Science and Technology Bureau (the sponsoring office for SARSA), are the following:

1. To assess the nature and extent of contract farming in a number of countries in sub-Saharan Africa.
2. To analyze the distribution of costs and benefits associated with contract farming.
3. To assess how official development assistance has supported contract farming and its development impact.
4. To provide a set of conclusions and recommendations for USAID that summarizes the strengths and weaknesses of contract farming.

The project addresses AID's concern with income generation; institutional reform, particularly regarding the role of private sector organizations; technology transfer to African small farmers; and sustainable development. SARSA perceived of the contract farming study as an ideal context to examine two issues of importance to the cooperative agreement: (1) the regional development impact of agricultural investments, with an emphasis on generation and use of farm incomes, regional employment effects, and the strengthening of market linkages within particular regions; and (2) the relationship between income generating projects and sustainable development.

It was agreed in the early stages of the project that an interdisciplinary team of researchers was required to address the different issues of the study. An interdisciplinary team, with a core of four principal investigators--Dr. Michael Watts (Social Scientist), Dr. Peter Little (Social Scientist), Ms. Christopher Mock (Agribusiness Specialist), and Dr. Martin Billings (Agricultural Economist)--provided the bulk of the comparative analysis for the project, but they were supplemented by researchers drawn from Geography, Anthropology, Political Science, and Economics. The research was carried out in conjunction with the International Development Research Centre (IDRC) of Canada, which organized a parallel (but much larger) study of contract farming in southern and eastern Africa over a two-year period. The IDRC study is to be completed in 1989.

The overall SARSA study has been coordinated by Drs. Michael Watts, Peter Little, and Thomas Painter, the latter who co-managed the project until August 1986. Drs. Little and Watts were responsible for editing and putting together the final report. The study also employed a series of researchers to conduct in-depth case studies--the backbone of the report (see Volume II)--and literature reviews, building upon their ongoing interests and research into contract farming. These consultants were: Dr. Judith Carney (The Gambia), Mr. John Horton (Senegal), Dr. Cyril Daddieh (Ghana), Dr. Richard Palmer-Jones (Malawi), Mr. Steven Jaffee (Kenya), Mr. Alex Clapp (Latin America overview), Mr. John Kane (livestock contracting), and Ms. Lucy Jarosz (gender and household issues in contracting). These analyses are available as SARSA Contract Farming Working Papers #5-13 (see the appendix to this chapter).

The study consisted of three phases. The first was a comprehensive literature review (see Working Papers #2-4) to identify strategic issues and questions. The second is a series of case studies in seven sub-Saharan countries focusing on specific contracting projects and addressing a series of central issues:

1. The distribution of costs, benefits, and risks among the actors concerned in contracting (state, private firms, and growers).
2. The organizational, institutional, and legal relationships involved in contracting.
3. The allocation of decision making with regard to investment, risk, production, surpluses, and distribution in contract-farming schemes.
4. The role of private corporations in contracting with regard to technology generation and transfer and extension.

5. The empirical record with respect to the effects on participating farmers and local and regional economies.

The third phase is a summary assessment, based on the case studies and secondary literature, with conclusions and policy implications. It should be noted that the time and resources available to the study did not allow the team to collect the type of in-depth data needed to quantify the exact relationships among all critical variables. Because the study was the first systematic attempt to examine the institution of contract farming in Africa across different geographic, commodity, and organizational types, it had to balance the demands of a broad inventory of schemes with the need to collect considerable micro-level data on farmer incomes, expenditures, and marketing behavior. The Africa Bureau and the project opted for a "middle of the road" strategy that involved a broad survey of the extent and nature of contract farming across all sub-Saharan Africa, but selected a limited number of case studies (7) to explore, in the field, some of the local and region-level impacts of contract farming. The amount of field time that was allocated to each case study did not exceed two months, although in many cases the researchers had previously conducted long-term research in the area and were able to build upon previous work. Nonetheless, certain local and regional issues identified in the report could benefit from more detailed field research in the future.

3. Organization and Rationale of the Study

The first task of the project was to establish some sense of the universe of contract farming in sub-Saharan Africa as a basis for a working definition of contract farming for the purposes of the study and to facilitate the selection of a sample of countries and schemes. A complete inventory of schemes was not possible, because it quickly became obvious that the published sources represented a most incomplete record.

An inventory of the most important schemes from published sources was compiled (Working Paper #4). In addition, the annotated bibliography by Ms. de Terville and a field reconnaissance by Ms. Mock permitted a wider, if rough and ready, assessment of the diversity and extent of schemes (see Chapters II and IV for a further discussion). From this compilation of sources and the field trip, the following general points were established:

(1) The variety and extent of contract farming is massively underestimated in Africa as reflected in the published literature. Virtually all states have some form of contracting, and some have an especially dense network of

contracting schemes (for example, accounting for close to 20 percent of smallholder output in Kenya).

(2) The variety of contracting schemes was large, in terms of the heterogeneity of the contract itself, and also in terms of contracted commodities and the social organization of schemes. Some contracts were little more than simple forward markets, while others were authoritarian systems of tight control over all aspects of production and marketing (SEMR scheme in Cameroon). Some schemes were large outgrowers' schemes with a centralized processor, a nucleus estate, and thousands of centralized growers (oil palm in Ghana); others involved limited numbers of growers producing for middlemen exporters on the basis of loosely structured contracts resting on customary notions of obligation (Senegalese fresh-produce exporters).

(3) Three-quarters of all projects involved horticultural and "classical" export export crops, particularly perennial, processed crops such as tea, palm, and sugar. Some "new" crops (i.e. staple foodstuffs such as rice) were newly grown under contract, but their commodity characteristics (such as labor intensity, perishability, and processing capability) were seen to be unlike the classical export crops.

(4) Good comprehensive local studies of schemes (from production to consumption) are extremely rare. The empirical record on contracting was usually limited and uneven, although some contracting schemes (usually the large and visible outgrower projects such as the Mumias sugar scheme in Kenya) had been extensively researched (although critical aspects such as nutrition and health had been ignored).

(5) The interpretations of contracting were exceedingly polarized and ideological, as seen most explicitly in the case of dependency theory versus agribusiness analyses. The sorts of careful local studies characteristic of sharecropping, for example, or other contractual arrangements were largely nonexistent in the contract-farming literature. Too much theory seemed to be chasing too little fact.

(6) Contract-farming schemes exhibited complex organizational configurations of local and transnational capital, the state, growers, and various donors. Contracting schemes were rarely the monopoly of transnational agribusiness; the state is usually a key participant in contract-farming schemes, either directly in equity terms or as a facilitator of joint ventures between local and foreign investors.

This initial phase of inventory and analysis led to two decisions concerning the definition of contract farming and a simple taxonomy of schemes for sample selection.

1. Definition: For the purposes of the study, contract farming refers to forms of vertical coordination between growers and buyers/processors that directly shape production decisions (for greater detail, see Chapter II). These schemes contractually specify marketing obligations (by volume, value, and quality, and sometimes price determination, in advance), input provisions, and some control at the point of production (a division of management functions between contractor and contractee). This is usually referred to as "production management" contracting. This definition excludes schemes that involve only forward marketing arrangements.

2. Taxonomy: Contract-farming schemes can be simply classified in relation to commodity (and hence technical) specifications and social organization. Like the recent SARSA work on rural-urban exchange (cf. Evans et al. 1987), our study found that focusing on key commodity types was a convenient method for examining a range of organizational, marketing, and regional development issues. The commodities, most commonly grown on contract farming schemes, can be divided into:

- (1) Classical export crops usually processed (oil palm, cocoa, sugar, and tea)
- (2) Horticulture (fresh or processed vegetables, flowers, and oil seeds)
- (3) Staple foodstuffs (rice and wheat)

Each commodity is associated with specific technical conditions of production and labor regimes, which effect its potential for generating local and regional development. Green tea must be processed within eight hours, sugarcane requires a moisture threshold for crushing, and vegetables must meet certain standards such as quality, size, and taste. These characteristics pose both limitations and opportunities, and are usually associated with different social organizational forms. The forms of social organization refer to institutional and management arrangements. They can be simplified as follows:

- (1) Nucleus estates or satellite schemes with centralized outgrower schemes and a processing unit;
- (2) Decentralized outgrower schemes with a processing unit;
and
- (3) Outgrowers and marketing companies/buyers.

Within the universe of projects circumscribed by the definition of contract farming and its organizational forms, the sample of cases selected for this project was determined by a series of criteria.

(1) The SARSA study was undertaken in conjunction with the IDRC project, and a division of labor was established to avoid duplication of work. The IDRC project focused on eastern and southern Africa and on large outgrower schemes of the classical export crops. In contrast, SARSA focused more than half of its field efforts on West Africa and paid considerable attention to small, informal contracting schemes.

(2) Some schemes had been so thoroughly studied that any further intensive field research would have been unnecessary replication. The Mumias sugar scheme is an obvious case, but others include some of the large nucleus-estate schemes (for example tea in Kenya, cotton in Ivory Coast, and tobacco in Tanzania: see Lamb and Muller 1982; Torp and Marcussen 1982; Boesen and Mohele 1980).

(3) Some countries have a history of contract-farming projects and density of schemes that could not be ignored. Kenya is the obvious case. However, the decision was made to concentrate on aspects of contract farming and commodities not previously studied (vegetables), and to examine projects whose longevity permits an analysis of historical change, since few studies examine the sustainability of project organization and growers' income over time.

(4) To give special weight to commodities that have been understudied, particularly the horticultural sector (for which there are not good case studies from Africa in spite of rapid growth during the 1970s) and the development of contracting for staple foods. The latter fits in with USAID's concern with improving food availability and with the larger, and controversial, issue of whether contracting is an appropriate institutional form for staple foods (see Binswanger and Rosenzweig 1986).

In view of the paucity of information on some of the critical sorts of contracting schemes, and limited ability, in terms of time and support, to generate local-level data, it was decided that detailed case studies should become the backbone of the project, wherever possible building upon long-term research already in progress. This would also permit collaborative arrangements with African researchers, since those conducting case studies often had institutional affiliations locally in place.

The case-study approach--rather than a more aggregate national inventory and/or overviews--is central to this study. It was felt that the empirical record was especially limited in certain critical areas, and that it could only be resolved through careful systematic study of actual projects. The case studies have also been selected to represent those commodities and organizational forms that are underrepresented in published work.

4. Case Studies and Brief Synopses

4.1. West Africa

4.1.1. The Gambia: The Jahaly Pacharr Project

This irrigated-rice project, located 280 km upstream on the banks of the River Gambia, began production in 1984. Funded as a multidonor package in which IFAD has a major management and funding role, the Jahaly Pacharr project involves 2,000 rural households drawn from 70 villages. Nearly 1,500 ha are developed on long-term lease from the government, 560 ha of which are pump-irrigated for double-cropping. The management provided water, mechanical land preparation, and a Green Revolution biochemical package relying on short-duration (120-day), high-yielding rice varieties. The growers perform all farm operations and provide a portion of the harvest as payment for service and water provision. Growers must belong to cooperatives in order to receive inputs and to facilitate loan repayment. Jahaly Pacharr growers are contracted on leased land and, in theory (as tenants), face eviction in the event of contract abrogation. Much land is currently registered in the name of women operators who have historically cultivated rice in the area. Growers have two local forms of interaction with management--the land-allocation committees and contract farmers for each ten-ha block--but there are no formal growers' associations.

4.1.2. Nigeria: three schemes under study

(1) The Bakalori Irrigation Scheme, part of a massive state-financed scheme for river-basin development, is located in northwestern Nigeria. Construction began in 1975 and involved the creation of an 8,000-ha reservoir. Over 45,000 ha have been leveled with extensive canal and bund construction; almost 50,000 farming families are involved in the Bakalori project. By 1982 costs were in excess of US \$0.5 billion. Management of the project was in the hands of a British consulting firm, but ownership was wholly in the hands of the Nigerian Government. The intention was to introduce double-cropping of rice and wheat under mechanized irrigation conditions. Land was appropriated by the project and returned to growers under contract.

(2) The Texagri Gari Project, of Texaco Agro-Industrial Nigeria, was founded in Nigeria in 1975, 75 miles north of Lagos, and is 60 percent owned by Texaco. Several prominent Nigerian businessmen own another 25 percent of the equity, and the remaining 15 percent is owned by a farmers' co-op. The project involves 6,000 ha of land acquired from local governmental authorities, consisting of a nucleus estate and 141 outgrowers (accounting for less than one-third of production). Cassava is the principal crop and is processed into gari, a staple widely consumed in Nigeria, through an on-site factory with a maximum output of 6.5 tons per day. Most factory employees are Yoruba women. The project utilizes cassava clones from the International Institute for Tropical Agriculture (IITA), and production has grown from 1,670 tons in 1978 to 11,000 tons in 1984.

(3) The Cadbury-Kaduna State Tomato Paste Project is a joint venture between Cadbury and North Central (now Kaduna) State to produce tomatoes for paste. Established in 1971, the scheme was designed to use dry- and wet-season tomato production in low-lying swamp areas. In conjunction with the Ministry of Agriculture, the company provided critical inputs, extension, and credit to almost 300 outgrowers. Growers are responsible for all on-farm operations that are nonmechanized and are bound by a nonwritten contract. The factory has a capacity of 60 tons per day, but has rarely operated at full capacity. Total puree production has never exceeded 300 tons per annum.

4.1.3. Ghana

Three cases were selected, all emerged from the post-Independence attempt to expand palm production. The cases are as follows:

(1) Benso Oil Palm Plantation: a joint venture between the Ghanaian state and U.A.C./Unilever. The government appropriated 16,000 ha for a plantation with the assumption that an outgrower component would account for another 3,000 ha. In fact, the outgrower component has been relatively undeveloped and the scheme purchases small quantities of kernels on the spot market to supplement plantation production.

(2) Twifo Oil Palm Plantation: a joint venture between the government (Central Region Development Corporation) and three international companies (including Mobil, Zachonis, and Paterson Simons). The scheme is partly financed by the EEC and involves an oil-palm estate of 4,800 ha and an anticipated 300 contract outgrowers. By 1983, only 20 farmers were contracted in a largely nascent outgrower component.

(3) Ghana Oil Palm Development Corporation: a joint World Bank-Ghanaian Government scheme. The largest and most active of

the oil-palm outgrower schemes, the state appropriated some 10,000 ha, although peasants have systematically blocked access to some of the property. By 1982 (the first harvest), 5,100 ha had been cultivated, outgrowers accounting for 1,200 ha. Some 300 contract farmers are involved, and it is anticipated that by 1990 the population of outgrowers will increase to 1,150. The scheme has direct control over growers who are formally tenants and determines a rigid production schedule that peasants must follow.

4.1.4. Ivory Coast: The PALMINDUSTRIE Project

In 1961 the Ivoirian government initiated the Plan Palmier to invest heavily in the oil-palm sector. Over a ten-year period, 35 billion CFA was invested to establish a total of 15 nucleus estates with processing mills and outgrowers. The state had a fundamental role in shaping what came to be the PALMINDUSTRIE scheme and entered into an alliance with both private capital and international donors. The European Development Fund and the World Bank have provided 50 percent of investment during the first decade, and expansion is anticipated between 1986 and 1990 amounting to a further US \$184 million (of which 40 percent will be provided by the state). By 1980, the outgrower schemes under PALMINDUSTRIE accounted for 37,000 ha and the plantations for 52,000 ha. Outgrowers accounted for 40 percent of total palm-oil production, generated by 8,500 smallholders in five producer regions. Acreage devoted to palm oil increased by 1,500 percent between 1963 and 1978, and the PALMINDUSTRIE scheme is generally seen as a major parastatal success. Smallholders contract with PALMINDUSTRIE and deliver all household production of palm kernels to the mill in return for advice, seedlings, fertilizer, and extension.

4.1.5. Senegal

Two kinds of case studies were included. The first was an analysis of the poultry industry (and commercial poultry products) based on a sample of 15 companies. Most of these efforts are in the hands of local Senegalese businessmen who are contracted to grow chickens for meat or eggs and may themselves contract for feed. The most durable contracts were between companies and institutions (hotels, hospitals, restaurants, and retailers) in which contract relations were determined annually and involved quality and production specifications. The second research program (which actually involved two case studies) involved an examination of the horticultural sector, specifically the production of fresh fruits and vegetables for export and local consumption. The research involved an in-depth analysis of ten companies; one of the companies is a public firm (SEMPRIM), and the remainder are private (Senegalese, Lebanese, and French) of widely differing size, experience, and longevity. The companies are as follows: SEMPRIM, SIDCA, SEPAM, SAFINA, SOEX,

DRAME, SAAF, GIPES, JARDIMA, and SENIMEX. The most important commodity is French (green) beans, which accounts for 70 percent of fresh produce, followed by melons (18 percent), tomatoes (3 percent), and peppers, okra, eggplant, and mangoes (collectively 9 percent). A second component of the horticulture study involved 8 weeks of field research among vegetable growers to compare incomes, income distribution, risk, and resource use between contract and non-contract farmers in the area.

4.2. Eastern Africa

4.2.1. Kenya

This case study involves an examination of horticultural contracting in an area where production contracting generally has both a greater density and longevity than in most sub-Saharan countries. This module includes three schemes:

(1) Pan African Vegetable Products (PVP) Ltd., a vegetable-dehydrating company, is one of the first schemes involving processing in Kenya. Established in 1962, the scheme has had a checkered history, but maintained a well-developed outgrower component. The scheme was initiated largely in the pursuit of social and political objectives related to a smallholder settler program. While these objectives were partly fulfilled, the scheme was not economically sustainable. To compensate (and to expand the industry) the Kenyan government entered into a joint venture arrangement with a West German processing company and with several European financial institutions. However, the larger project was adversely affected by changing market conditions within Kenya and in the international market for dehydrated vegetables. The PVP smallholder contract farming scheme became a victim of the more general financial and marketing problems faced by the scheme.

(2) Kenya Horticultural Exporters (KHE) is a case of an export-oriented fresh-vegetable system geared to the large UK Asian-vegetable market. KHE has been the leading fresh-fruit and vegetable exporter for two decades and throughout its history has used small- and medium-scale contractees. The KHE case demonstrates the emergence of contract farming within the context of a volatile, yet expanding international market. The larger market environment that gave rise to the scheme served eventually to undermine its sustainability. In the competitive market environment in Kenya, contract enforcement by KHE became very difficult.

(3) Njoro Cannery is a locally owned company acting through a marketing-management and technical-assistance contract with a French company (Saupiquet) engaged in the canning of French beans. Initiated in 1982, the project contracts with close to

15,000 growers, of whom 70 percent are women growing beans on small (0.05 ha on average) plots.

4.2.2. Malawi

The Smallholder Tea Authority (STA) is a parastatal established in 1967 that is currently responsible for 2,350 ha of tea among 4,815 registered growers in two southern districts. STA tea represents about 13 percent of the total tea production in Malawi. The scheme is responsible to a board of directors, which includes representatives from government, the plantation sector, and the Commonwealth Development Corporation (as an investor). Under the scheme the growers are provided with planting materials and fertilizer on credit for the first five years; the loans bear interest of 1.35 percent. Growers are paid in two installments, the first after the sale of green tea and the second after the settling of STA accounts. The growers, who have local organizations referred to as Block Committees, are contracted to produce under conditions specified by STA. Failure to do so can result in withdrawal of permission to grow tea and the transfer of land. STA has been only marginally profitable, but has certain parallels with the much-touted Kenya Tea Development Authority (KTDA).

The selection of these case studies fulfills the critical research requirements for contract farming as defined for the purposes of this study:

- (1) cases pertaining to staple foodstuffs (rice, gari) and understudied export commodities (horticultural products, particularly poultry);
- (2) cases pertaining to large-scale nucleus-outgrower schemes in underrepresented commodities (palm oil, tea);
- (3) cases pertaining to organizational forms of contracting other than large outgrower schemes (specifically local private enterprises); and
- (4) cases in those locations where the density and duration of contracting provides an important historical and dynamic perspective on contracting changes through time (specifically Kenya).

5. Outline of the Report

The outline and different chapters of the report reflect the major emphases of the study. Chapter II places contract farming in the general context of agricultural development, particularly in Africa; discusses the diversity and range of contracting schemes, referring not only to Africa but also to other world

regions; and explores the contracting process itself as a legal and institutional mechanism organizing production relations. The next chapter (III) discusses more specifically the economics of contract farming, paying particular attention to the characteristics of contract commodities and the importance of favorable external markets for sustaining contracting schemes. This chapter discusses the benefits/costs of different types of contracting schemes, from large, nucleated outgrower to informal, local private schemes.

In Chapters IV to VI, we assess the distribution of benefits, costs, and risks at the levels of the private and public firms, the farmers, and regional and national economies. These three chapters contain the "heart" of the comparative analysis, drawing on the different disciplinary perspectives that informed the study; that of the agribusiness specialist, social scientist, and agricultural economist. The critical question addressed is: under what conditions does contract farming benefit local farmers and generate sufficient surplus to catalyze processes of local and regional development?

Chapter VII examines a topic that emerged of special importance to AID during the course of the study. This is the question of the ability of contracting firms to disseminate useful technologies to African farmers, which could be utilized both in contracted and noncontracted farm activities. The corollary to this is the effectiveness of extension systems that have been the conduits for these technologies. To what extent has contract farming assisted in technically transforming African agriculture? What role have contract-farming extension systems played in disseminating new technologies to small farmers? Are there lessons from the experiences of contracting firms with technology transfer and extension that can be applied more generally to solving some of Africa's agrarian problems (e.g., low productivity, low incomes, and ineffective public extension systems)?

Volume II, in turn, contains the most important of the case studies that were carried out under the project. We have devoted an entire volume to them because of their importance to the comparative analysis in Volume I, and because very few good, empirically based analyses of contract-farming schemes have been conducted prior to this project.

Appendix

WORKING PAPERS

1. Contract Farming in Sub-Saharan Africa: A Research Proposal. Michael Watts and Contract-Farming Research Group.
2. Contract Farming, The Private Sector and the State: An Annotated and Comprehensive Bibliography with Particular Reference to Africa. Diana de Treville.
3. Economic Aspects of Contract Farming in Less Developed Countries: An Annotated Bibliography. Nicholas Minot.
4. Inventory of Contract Farming Schemes in Africa. Nicholas Minot.
5. Contract Farming in Senegal. Martin Billings.
6. Contracting in Animal Protein. John Kane.
7. Case Studies of Contract Farming in the Horticultural Sector of Kenya. Steven Jaffee.
8. Contract Farming in the Oil Palm Industry: A Comparative Study of the Cote d'Ivoire and Ghana. Cyril Daddieh.
9. Contract Farming in Irrigated Rice Production: Jahaly Pacharr Project, The Gambia. Judith Carney.
10. Characteristics of the Horticultural Export Enterprises Utilizing Contract Farming Schemes in Senegal. John Horton.
11. Staggering Along and Buying Time: the Smallholder Tea Authority of Malawi. Richard Palmer-Jones.
12. The Traffic in Women: Buying and Selling Labor Power in African Contract Farming. Lucy Jarosz.
13. Contract Farming in the Horticultural Sector in Senegal. Bechir Rassas.
14. The Mystification of the Contract. Alex Clapp.

CHAPTER II

CONTRACTS AND CONTRACT FARMING: LEGAL, HISTORICAL, AND GLOBAL DIMENSIONS

1. Contract Arrangements in Agriculture

The notion of contract is central to the study of contract farming in Africa. An examination of contracting in production regimes of any form, agricultural or industrial, highlights the quite different senses in which the term is employed. On the one hand is a legalistic and essentially Eurocentric definition that refers to a general legal form of agreement between parties conceived of as abstract individuals who are formally equal and must have legal personalities (Snyder 1981) or, relatedly, must be circumscribed by a developed civil authority. On the other hand, there is a more embracing definition, which starts from the cross-cultural variability of contracts and their social contexts. For example, indigenous contracts may have all the appearances of complex, variable executive contracts, but they may be unwritten and express locally constituted general, legal, or customary proprieties that must be observed if the contract is to be accorded social recognition (Robertson 1987). In this latter open-ended sense, a contract refers to any mutual agreement between individuals that specifies fixed terms in advance (Mahoney 1977).

There is good reason to adopt the broad approach in the study of African agrarian production, precisely because of the importance and bewildering variety of contractual forms. For example, one of the major theoretical developments in agricultural economics has been to approach these diverse institutional arrangements in production via market failure (Biswanger and Rosenzweig 1984). The general interdependence of factor markets--for example, different types of tenancy, piece-rate systems, sharecropping, labor-recruitment contracting, and the more general problem of interlinked contracts¹--means that market failure anywhere in the rural sector is widely transmitted, even if the labor market operates perfectly.

The centrality of contracts defined in the wider sense is illustrated clearly in sharecropping or share contracting, where two or more parties agree to combine their privately held resources in a productive enterprise so that output is divided by predetermined proportions. As Robertson (1987:7) shows, each contract "must be understood not just as a structure expressing cultural or statistical norms but as a process extending through many months or years in the life of the people involved." The complexity and variety of contractual arrangements in share-

cropping--and doubtless the antiquity and durability of it as a production institution--stem from the temporal qualities of agriculture and the heterogeneity of resource endowments among partners. Because the contract extends through the farming season--in labor contracts in West Africa often over a number of years--it can embody a wider variety of activities and operations, than, for example, a fixed-rent tenancy. Similarly, since the parties rarely possess identical resources, the potential constellations of cooperation are enormously complex. For example, it is well known that in India one can identify a bewildering variety of short- and long-term labor contracts--often tied to a variety of other resources and factor markets--all operating simultaneously within one community (Bardhan and Rudra 1981).

Sharecropping studies reveal three basic features (Pearce 1983), which prove to be equally informative in the study of another form of agrarian contract, namely contract farming. First is the wide range of contexts in terms of factor endowments in which contracts occur, from labor scarce/land surplus systems in West Africa to agricultural involution in parts of Indonesia. Second, the actual empirical circumstances of the individuals imbricated in the contract are equally variegated, embracing the landless Indian laborer, the wealthy, capitalized Ecuadorian family farmer, and the Californian rice grower. And third, the contracts clearly have the direct consequence of mobilizing labor and frequently of "gaining access to labor in the absence of a mass of landless laborers" (Lehmann 1986:345). This geographical and historical variability of sharecropping has launched a large diversity of theoretical explanations. While it is self-evident that share contracting cannot be simply assigned a status as transitional or inefficient, as done by the early political economists, the centerpiece of the debate has been the question of whether contracting is an imperfect mechanism to deal with a perfectly competitive world or a perfect mechanism to deal with an imperfect world. The neoclassical approach has posed two questions: first, what are the efficiency and risk characteristics of a contract based on harvest shares, and second, what determines contract specification.² To condense a complex and esoteric set of arguments, this literature tends to argue that contracts allow individuals to "make better use of their specific endowments in imperfect markets and to arrive at combinations of income, effort, and risk that reflect both their endowments and tastes" (Binswanger and Rosenzweig 1984:23).

The neoclassical approaches have often been preoccupied with static notions of efficiency and have conspicuously neglected some central aspects of share contracts such as the heterogeneity of labor, the dynamics of contractual change, and sources of power and collusion in contract determination. Widely different bodies of theory have made their mark in these areas. First, the anthropological approach of Robertson (1987) shows how time--such

as household cycles--is a missing element in the analysis of contracts. He obliges us to consider a contract not as a static map of unchanging interests between parties, but as something that may change through time with the transformation of material conditions and in relation to domestic (life cycle) processes. For Robertson sharecropping is, above all, a flexible mechanism that functions to facilitate the devolution of property within or between households that are, by their nature, unstable as productive units.

Another related perspective--political economy--also starts from the importance of social context but emphasizes the variety of local power relations and the different functions of sharecropping contracts in relation to different regional agrarian structures (Pearce 1983; Lehmann 1986). In this view share contracts tend to be means of appropriating surpluses and controlling access to labor (the labor process) via a specific division of farm management. Share contracts are, therefore, a preferred form in the following circumstances: (1) where power relationships privilege the landowning class in contract determination but where supervision costs are potentially high; (2) where the tenant has a decisive influence on the contract but a low resource endowment limits his/her ability to discount income variance as a decision variable; and (3) where class relations are open ended, where both partners exist close to the margin (Pearce 1983:65).

2. Contract Farming

This brief excursion into one particular--and widespread--form of contracting in agriculture, namely sharecropping, is especially useful in situating a related phenomenon, contract farming. The contract in contract farming refers to an agreement between a farmer-grower and an input supplier, processor, or buyer-exporter that takes the place of open-market exchange (Wilson 1987; Minot 1986; Davis 1980). The classic, but broad, definition of contract farming is provided by Roy (1972:3):

[T]hose contractual arrangements between farmers and other firms, whether oral or written, specifying one or more conditions of production and/or marketing of an agricultural product.

In the lexicon of neoclassical economics, contractual relations refers to one of a variety of coordinating mechanisms³ that can be employed in the context of market imperfections and risk. At one pole lies the spot market, where independent producers sell marketed output to independent buyers, and at the other pole is the fully vertically integrated firm, in which the various stages of the production-marketing chain is incorporated within one enterprise. Contract farming, therefore, stands in

between the extremes of spot markets and vertical integration. It is intermediary in two senses. First, it captures some of the advantages of integration and avoids some of the scale complementarity and political obstacles of vertically integrated estates and plantations (Mead 1984; Graham and Floering 1982). And second, it is intermediary between large, centralized (and heavily supervised) farms, estates, or plantations, and minimum extension programs to decentralized family farmers (Ruthenberg 1973).

Insofar as contract farming involves an agreement--a production or forward contract made in advance of undertaking production--a non-farm firm (private or public) has title to a portion of on-farm resources and shares, in varying degrees, decision-making power with the grower. The grower, under contract, receives certain inputs, services, and supervision from the processor/buyer/exporter. Contract farming has been central to US agriculture since the 1930s, when the food and fiber industries capitalized, and when the need for "orderly marketing" was taken up by processors who wished to integrate separate stages of the food chain (Wilson 1986).

Significant growth--almost 50 percent--in forward contracting occurred among all crops in the US between 1970 and 1980. By 1980 almost one-quarter of all crop and livestock output by value was produced under contract (Sporleder 1983), and over 80 percent of all sugarbeets, vegetables for processing, and livestock items were cultivated under contract. Vertical integration--popularly seen as the invasion of agriculture by large corporations--conversely is quite rare in US agriculture, accounting for only 7.4 percent of all agricultural output in 1980. The proliferation of contract farming in the US has, of course, been associated with the emergence of agroindustry (and the emergence of large-scale grower-shippers, see Thomas 1985) and a fundamental transformation in the structure of American agriculture.

If the US was a major crucible in the forging of contract farming, by the 1960s it was widespread throughout developed capitalist states. By 1965, a variety of contracting forms had appeared in Japanese rice farming, and by 1972 the British Government had issued a White Paper on a series of "public interest questions" pertaining to the extensive employment of contracting in livestock and farm produce. In the East European bloc, state contracting is of course central to the policies of socialist agroindustrialization. Hungary has made extensive use of contracting with cooperatives and the "private sector" to fulfill state agricultural goals. The post-Mao reforms in the People's Republic of China and the genesis of the New Responsibility System have also instituted elaborate systems of production contracting (Nee 1986).

It has been the operation of agribusiness on a global level, however, that has facilitated the expansion of contract farming across new international frontiers into the Third World, and its adoption by both local capital and state-owned enterprises. Latin and Central America have witnessed quite extensive post-war development of contracting (see Clapp 1987), and Mexico in particular has constructed a large part of its beef, horticultural, and brewing industries around production contracting.

The nature of contract stipulations in contract farming is enormously varied. The grower lends to the production process his/her labor power and the effective property within his/her possession. The contractor provides some of the production inputs, may participate in some of the production decisions, and holds title to the product. The contract therefore embodies the precise extent to which the grower retains some measure of autonomy over the production and labor processes and the non-farm contractor (buyer, exporter, or processor) has been legally granted a measure of control over production and exchange (Davis 1980).

In the US, contract variety is captured in a sample taxonomy developed by Mighell and Jones (1963). Market-specification contracts are future-purchase agreements that determine quantity, timing, location, and price of commodities sold, but they vary considerably in terms of control exercised by the contractor even if it is nominally a market contract (Wilson 1987). Resource-providing contracts specify the sorts of crops to be cultivated through the provision of seed, and frequently a technical package, to facilitate certain sorts of production practices. Resource provision often includes credit. Production-management contracts are contracts whereby, in varying measure, the production process is directly shaped and regulated by the contractor via the provision of machinery, technology, and direct supervision. In some cases, a contract may embody price and production determination in such a way that the grower is a de facto pieceworker with minimal autonomy. According to a study in the late 1960s of 420 contracts in the US, 80 percent supplied inputs, 90 percent involved some restrictions on production practice, and 56 percent determined at least two "important production practices" (Harris and Massey 1968).

These contract forms, therefore, contain differential levels of what Davis (1980) calls direct control. In addition, however, contract specification of price and time of delivery can impose a form of indirect control insofar as family members police themselves--they have fewer incentives to shirk than hired laborers, since family members share in profits--and have the capacity to work harder and longer to cheapen the unit cost of production (i.e. the Chayanovian capacity for self-exploitation).

The customary distinctions between contracts that stringently determine production routines and the "simple" forward agreements to market are quite often drawn up after the crop has been planted, and are not necessarily watertight. Indeed, in some cases it is not easy to distinguish between the two, especially where production is continuous:

For example, fluid-grade milk is usually sold under a continuing contract between producer and cooperative. These arrangements are . . . marketing contracts, but it is possible to define them as production contracts because they may influence subsequent business decisions (Mighell and Hoofnagle 1972:2).

As Wilson (1987:50) suggests, these distinctions simply represent points along a continuum. What is critical is the enormous variety of contracts,⁴ parallel in fact to the heterogeneity of sharecropping agreements. The question of contract heterogeneity becomes especially pronounced when contract farming is examined internationally. In many Third World contexts the contract is not written, but may employ local customary sanctions between growers and buyers or domestic capital (see Jaffee's case studies, Volume II).

For the purposes of this study, the domain of contract farming is circumscribed by the following criteria:

(1) A futures or forward market contract for a specific product. There is no presumption that the contractor must be an agent of international agribusiness or a large-scale processor. Contractors may be domestic capital, state-owned, or joint enterprises, and relatedly may be simple buyers/middlemen or exporters. Both parties commit to buy and sell specified volumes/acreages often, though not invariably, at predetermined prices. The completeness, duration, and specificity of the contract varies considerably from case to case. Contracts may be oral or written, but the customary basis for enforcement is socially constituted.

(2) Production contracting links product and factor markets. Purchase commitments rest in some measure on the provision of inputs and services by the contractor and specified use by the grower who may or may not be organized into grower associations. Contractually linked markets generate an explicit division of labor and farm management between grower and contractor, and differential autonomy and control between parties, both embodied in the contract. There is no presumption of market destination (i.e. the grower's crop may be destined for either local or foreign markets, with or without processing).

(3) Production contracts constitute different systems of payment and therefore differentially allocate production and

market risks between contractor and grower. In some cases of crop-share contracts without predetermined price (see Billings in Volume II), production risks are shared but not as equally as price. In price-specified contracting, the grower is essentially bound by a piece-rate system in which he/she bears most of the production risk but none of the price risk.

Contract farming defined in this way implies the following. First, that some form of regulation, control, and shaping of the production and labor processes by the contractor is paramount. The explicit division of farm management functions distinguishes contract farming from sharecropping, in which landlord-tenant relations rarely exercise such explicit control at the point of production (though some contract-farming schemes, such as the Jahaly Pacharr rice project, may involve a form of share contract), or the centralized downstream functions associated with processing or marketing. Similarly, this definition of contracting excludes from our purview the simple marketing or forward contracting associated with many Third World parastatal agencies and African Marketing Boards in particular. The exclusion of cases such as coffee marketing in Kenya or cotton in Nigeria rests on a belief that marketing contracts render the category of contracting much too amorphous for systematic analysis and comparative study.⁵ In some cases marketing contracts have gradually evolved to the point where the production processes are explicitly shaped by the contract (see the CFDT cotton scheme in Cote D'Ivoire, Bassett 1986).

A second implication returns to the question of variability within the category of contracting as defined for the purposes of this study. In contrast to the definition of Binswanger and Rosenzweig (1986), the conception of contract farming provided here is quite wide. Binswanger and Rosenzweig see contract farming arising from two sets of technological conditions associated with particular crops: (1) crops in which there are important scale economies associated with processing combined with coordination problems; and (2) long-term crops with high maintenance intensity. Therefore, contracting is defined by processing and is associated with a limited number of crops: sugar, tea, and rubber. Conversely, contract farming "has never been able to survive in foodgrains" (1986:529). However, in their schema, it is entirely unclear why contracting for sugar is chosen over estate production of sugar and, in any case, the constrained definition of Binswanger and Rosenzweig unnecessarily limits both the extent of contracting in nonprocessing sectors and the number of commodities involved. However, Minot (1986) has shown that while 75 percent of contract-farming schemes involve horticulture and "classical export commodities," the commodity range is nonetheless more extensive than a processor-focused definition stipulates. An inventory would thus include livestock, oilseeds, cotton, rice, cassava, and bananas. A preliminary inventory of African cases was able to document 16

Table 2.1

TYPOLOGY AND CLASSIFICATION OF CONTRACT FARMING SCHEMES IN AFRICA BASED ON PUBLISHED SOURCES

Commodity	Class ^a	No. of countries with CF schemes	No. of CF schemes in sample	% of schemes with nucleus estate	Ownership ^b			Av. No. of outgrowers	Av. contracted acreage per outgrower (ha)	Av. size of nucleus estate (ha)	Export or domestic market	Services (C, E, I, T) ^c	Organizational form ^d
					% of all schemes	Pr	St						
Tobacco	Q	6	6	0	10	45	45	5,500	0.6	0	D	C, E, I, T	3
Spices	Q	1	1	0		na		100	small	0	E	E, I, T	3 / 4
Coffee	Q	4	4	50	50	50	0	500	1.5	na	D/E	C, E, I	1 / 3
Seed Mlt.	Q	2	2	na	50	50	0	100	na	na	D	E, T, I	3
Tea	P/R	5	7	60	33	67	0	26,000	0.5	8,600	D/E	C, E, I, T	1 / 2
Horticulture	P/Q	9	10	10	80	0	20	1,160	0.2	na	E	C, E, I, T	2 / 4
Dairy	P/T	3	3	25	0	100	0	4,000	na	na	D	na	1 / 4
Cotton	Pr	4	4	50	33	67	0	9,500	na	na	D/E	C, E, I, T	3
Palm oil	Pr	5	8	100	0	80	20	2,000	4.0	10,500	D/E	C, E, I, T	1 / 2
Sugar	P/Pr	6	12	90	33	33	33	5,000	2.3	5,000	D/E	C, E, I, T	1 / 2
Pineapples	Pr	2	2	50	50	0	50	25	na	na	E	E, I, T	1 / 2
Rubber	Pr	2	2	100	0	50	50	1,200	5.0	12,600	E	C, E, T	1 / 2
Oilseeds	Pr	1	1	0	100	0	0	1,500	1.5	0	D	E, T	3
Poultry	T	1	1	100	0	0	100	20	400 ^e	120,000 ^e	D	C, E, I, T	1 / 2
Rice	F	2	2	0	0	0	100	2,000	0.2	0	D	C, E, I, T	2
Gari (cassava)	F/Pr	1	1	0	100	0	0	141	1	0	D	E, I, T	2

^a Q Quality control
P Perishability
Pr Large-scale processing
T Throughput
F Food contracts

^b Pr Private
St State
P/S Joint venture

^c C Credit
E Extension
I Inputs
T Technical

^d 1 Nucleus estate + processing
2 Centralized outgrowers + processing
3 Decentralized outgrowers + processing
4 Outgrowers + marketing company

^e Number of birds

crops (including horticulture as only one case) grown under contract (see Table 2.1).

This raises a second and related point--that the Binswanger and Rosenzweig model focuses almost solely on one particular type of contracting scheme, the centralized outgrower scheme. The archetype for such schemes is the Mumias sugar scheme in Kenya, a large joint venture, involving 23,000 outgrowers and a centralized nucleus-estate processing system of the Kenya Tea Development Authority (KTDA), a statutory public monopoly of 150,414 smallholders and 43 tea-processing factories. But this definition would exclude the private (transnational) cassava-processing scheme by Texagri in Nigeria that services 141 outgrowers and is oriented toward a domestic gari market, and the Limukuyu Horticultural Cooperative in Kenya growing fresh flowers for a Dutch buyer supplying European markets. Some state-sponsored settlement schemes also function as contract-farming schemes, notably where project participation is determined by regulated production under contract (see Tchala-Abina 1982). There is, then, considerable diversity of contractual and organizational forms within the production-focused category of contracting adopted in this study.⁶

2.1. Subcontracting

Subcontracting has become an important strategy in certain contract farming areas of Africa (e.g. Kenya, see Jaffee, Volume II). Conventional studies distinguish various forms of subcontracting on the basis of function. Economy subcontracting refers to the decentralization of component production on the grounds of costs, because subcontractors accept narrower profit margins than those set by the principal firms. Specialized subcontracting is dictated by the fact that the subcontractor's technical knowledge is of a higher order--in certain critical facets of the production process--than the principal's; that is, skilled labor, patent control, or specialized equipment is the preserve of the subcontractor. Capacity subcontracting, by contrast, develops in the context of demand fluctuations and tight production routines and, by extension, implicates the subcontractor in a highly subordinated and dependent position. While it is clear that the relations of dominance and subordination vary quite dramatically in these contractual forms, the conventional literature tends to view subcontracting arrangements as an unequal exchange between capitalist firms focusing on exchange and the contractor (see Holmes 1985; Belil 1985).

The subcontractor, while juridically independent, may have little direct control over production as it is subsumed into a wider economic and productive structure. Even the form of the product may be directly "influenced by its de facto subordination into a part-process hierarchy" (Massey 1984:109). Subcontracting

appears then as part of a new, hierarchical structure of industrial units; if some remain nominally in control of their own means of production, they nevertheless "become formally subordinated to other [principals] via credit and patterns of tied subcontracting" (Harvey 1982:438).

These fundamental changes in production, situated on the canvas of realignments in an increasingly internationalized world economy, constitute the bases of a "new" division of labor. But in addition, there are important parallels between industrial restructuring on a world scale and new transformations in agriculture, one aspect of which also focuses on contractual relations. Indeed, these parallels are perhaps indicative of something rather more profound, namely industry actually invading agriculture itself (Vergopolous 1985; Rama 1985) producing "corporate" forms of production predicated on the contract.

3. Agriculture and the New International Division of Labor: Contracting, Agroindustry, and Agro-satellites

In the post-World War II world, trading of agricultural commodities continues to reflect the "old" division of labor. Argentina still exports staples developed in the nineteenth century to its traditional trading partners, just as Senegalese exports are dominated by groundnuts and a European market. But there have also been quite basic changes, not simply in terms of new commodities and new technologies, but also by changing relations of production in the countryside. Vergopolous (1985) sees such changes as relatively recent--since 1970--and linked to a recognition that the exceptional character of agricultural production (such as the limited supply of land and the law of diminishing returns) could be compatible with a view that placed agriculture in the center of economic analysis. A critical element of the new social integration of agriculture was through the intermediary of food, and specifically the role of food in wage determination and industrial profitability. It was the concept of agribusiness--originally articulated in the 1950s--that provided the explicit link between the two sectors. The transition from agricultural production to agroindustrial production via an agribusiness network implied a transition from dispersed and fluctuating output to concentrated, standardized output.

Agriculture presents a new face, therefore, in the visage of agroindustry which internationalized its production in the wake of import-substitution industrialization. As Sanderson (1986:25) notes, this integration spawned a whole new mode of industrial integration through contracting, technological packaging, non-equity forms of international control over production, and a relative homogenization of technology and production. The recent forms of regional integration into a world division of labor

reflect a "new" internationalization at the level of production. The rural sector is no longer internally constituted solely by free farmers and commodity circulation through trade (the market) or direct foreign investment as plantations, but rather as a "fully integrated element of internationally dependent economies" (Sanderson 1986:26). Such international integration takes place both through trade in the private sector and through export-promotion programs by host-country governments. At the point of production, internationalization does not exclusively depend on transnational capital or on trade. Rather, the social integration of the farmer is characterized by a new sort of corporatism (private--domestic and/or international--, public, or some combination of both) for organizing and supervising agro-industry, frequently outside of the market:

Integration is no longer anonymous as it was previously but personalized through the emergence of the "companies." It uses as its means contracts integrating the direct producers . . . conform[ing] to the micro-economic pattern of the company (Vergopoulos 1985:291).

The extent to which the new internationalization of agriculture--of which one fundamental aspect is contract farming--has shaped the labor process in Third World agriculture varies across space. Such developments are especially well documented in Latin America and particularly in Mexico, Brazil, and Venezuela. But even within these states, internationalization may nonetheless be, and frequently is, geographically balkanized--for example, the federally funded irrigation export-platform in the northern border states of Mexico--and have a pronounced enclave character. These new agricultural enclaves are, however, quite unlike the classical export enclaves of the old division of labor. First, the exports are regulated to a much greater extent by international standards and technological requirements (for example Mexican tomato regulation by USDA). Second, the new enclaves are very likely to be productively integrated via contracts rather than through spot markets or primary commodity agreements. Third, the enclaves have more impact on domestic markets either because of local provision (most Kenyan sugar is consumed locally), or because they must be more sensitive to local political and consumer considerations. And finally, the new enclaves must necessarily survive in, and be responsive to, a more complex and sophisticated political atmosphere (both domestic and international). In this sense the role of the local state--what Sanderson refers to in the Mexican context as "the politics of state management from the exporter's perspective" (1986:54)--is quite central.

Agribusiness--defined as a vertically organized food chain made up of producers, intermediaries, and processors (see Chapter VI)--is, of course, a central actor in the genesis of the new division of labor and the extension of corporate (i.e. socially

integrated) forms of production such as contracting. In some of the earliest and most documented forms--strawberries from the Mexican Bajio, cut flowers from Colombia, granulated sugar from Brazil--agroindustry is explicitly geared to global markets and technologies at the expense of low-income domestic consumers. The harnessing of biotechnology by agribusiness in the 1980s has naturally tended to further standardize technology, the labor process, and product characteristics. This combination of integration and standardization through agroindustrialization involves a "satellization" of the countryside (Sanderson 1986:59). The full integration (horizontal and vertical) into support and input services is especially vivid in Central America in the sugar and balanced feed (poultry and beef) industries. The cane producer is typically a client of a centralized refinery to which he/she is beholden for financing, water rights, transportation, and processing. This extreme corporatism, and by extension the disarticulation of the producer from national and local needs and from control over production, is the essence of satellite production.

4. Production Contracting in Agriculture: The Special Case of Fresh Fruit and Vegetables

An exemplary case of the creation of a world commodity in the context of the post-war international division of labor--and one where production contracting is absolutely central--is the fresh fruit and vegetable industry. The growth of a global horticultural agroindustry, and particularly the explosion of fruit and vegetable production for off-season exports and processing, exemplify new trends in geographical location (such as the growth of southern Europe, Central America, and parts of Africa as production centers) and in vertical coordination through contracting to Third World growers. Seasonal availability, wide interseasonal price swings, and product variability and perishability have historically limited the extent to which fresh produce enters international trade, but changes in both product and production technology had revolutionized the industry and the tradeable status of produce. On one hand, the physical qualities of produce have been transformed by the genesis of crops better able to withstand storage and long-distance transportation. On the other hand, means of standardization and quality control in the international vegetable trade have developed rapidly (as seen through OECD of the EEC). These developments are inseparable from wider changes in consumption patterns, specifically that the service of food preparation is now incorporated into food products, and the produce is increasingly presented in a form (processed or prepackaged) that lends itself to bulk handling by large retailing units. These tendencies toward product standardization and prepackaging/processing are particularly well developed in

the US, as are the production technologies that permit greater control over final product quality and form.

As fresh produce has become increasingly tradeable, the conditions of its production have been radically altered. The size and productivity of individual growers have grown and the extent of specialization has increased. This has occurred not only at the level of the grower, but also at the regional and state levels. In Western Europe the expansion and specialization of fresh exports have gone furthest in crops that require the most capital investment relative to land and labor, and for which external servicing and market economies are available. Hence the Dutch tomato and lettuce industries grew in output by 110 percent and 50 percent respectively between 1967 and 1972. This intra-European growth of output and specialization is reflected in part by the figures for fresh-produce imports in many West European states: in the case of France the imports of strawberries, melons, aubergines, and French beans grew by 703 percent, 209 percent, 142 percent, and 68 percent respectively between 1965 and 1975. Market integration and increased tradeability have been concurrent with the growth of long-distance, off-season suppliers notably from Israel, Central America, and sub-Saharan Africa. In the case of France, fresh produce has been imported from North Africa since the 1960s, but now comes increasingly from southern Europe, parts of sub-Saharan Africa, and Mexico. The most dramatic growth of the off-season produce trade and of processing under transnational auspices is the fresh-produce trade between Mexico and the US. Exports of six vegetables from Mexico to the US increased from 380,000 tons in 1971 to almost 600,000 tons in 1980. Exports of grapes, fresh pineapples, and citrus increased by an average of 300 percent over the same period.

The two central aspects of the horticultural agroindustry-- a growth of scale and concentration of operations, and an increase in the technical demands made by the buyer-processor on the producer--have tended to produce quite similar strategies, at the level of the firm, to control production in Europe as well as among Third World producers. As Mackintosh (1977:285) notes:

Both types of downstream user of the produce (brokers or large processors) attempt to establish a separate sector of agricultural production to supply them with raw materials, both seek to be monopsonistic buyers from their suppliers, both seek to erode the market relations between agricultural producer and buyer in favor of some form of vertical integration--without normally seeing ownership integration as the answer--and both have been the instigators of technical change at the farm level.

Whether between the large European producer and the big processor (i.e. the freezers and canners) or between the Third

World peasant and the transnational broker, integration tends to be through some form of contract. In the case of Western Europe, "transferred management contracts" are common, accounting for almost 75 percent of total production in crops such as peas and beans. Large processors such as Findus, Heinz, and Libby's, active in the fresh and processed food industry, obviously operate beyond European and North American boundaries, and transnational capital--and indeed some public enterprises--increasingly employ contracting. Indeed, some firms such as House of Bud in Senegal, HVA in Ethiopia, and Heinz in Tanzania have moved, for both political and economic reasons, from direct estate production to contracting.

The horticultural industry has obviously been a dramatic growth sector and captures the processes underlying the new international division of labor. As a consequence of both the geographical and productive restructuring in fruit and vegetables, the Third World has emerged as a major actor: by 1977 some 45 percent of US fresh fruit and vegetables--valued at US \$1.23 billion--were imported from the Third World. Mexico and Central America hold a special place in horticultural contracting and have been the laboratory for horticultural innovation and development since the 1960s. By 1970, in fact, there were 41 processing plants in Mexico, 19 in Costa Rica, and several each in Guatemala, El Salvador, and Honduras. Three-quarters of these establishments used contracts supplying half of all grower inputs; 85 percent of the contractors specified harvesting and delivery dates and determined prices. Thailand and Taiwan have also experienced rapid escalation of contract production of vegetables for processing and export, usually as joint ventures with foreign capital.⁷

5. Contract Farming in Africa

A recurrent theme in the assorted debates over the "agrarian crisis" in Africa in the last decade has centered on the role of the state (IBRD 1981; Bates 1980). Across much of sub-Saharan Africa it has been suggested that essentially overgrown, costly, administratively inefficient, and corrupt state apparatuses have "crowded out" private enterprise, distorted the market, exchange rates, and price policy, and acted as a systematic blockage to accumulation and marked improvements in agrarian productivity. Without underestimating the space occupied by government in viewing the landscape of poor agrarian performance in Africa,⁸ there are two important qualifications that need to be made. First, the role of international and domestic private capital in agriculture has grown quite substantially in the post-war period. And second, much state involvement in the agrarian sector transcends simple price manipulation as documented by Bates (1980), and in many cases approximates what Tchala-Abina (1982) refers to as "corporatism." In both cases, contract farming has

emerged as an increasingly important vehicle for both state corporatism and private investment, whether independently or as joint ventures. In the case of Cameroon, eight major parastatal projects, jointly funded by a variety of external donors (The World Bank, FAC, FED) and in some cases international capital, have employed contracting arrangements--in some instances for over twenty years--for cocoa, rice, coffee, and other food commodities. All of the evidence collected in the course of this project indicates that contracting has been massively underestimated in discussions of agriculture in Africa, and suggests a dynamism at the point of production, which contradicts the overwhelming sense of stagnation and decay that dominates the "crisis" literature.

5.1. History

Robertson (1987) has documented the antiquity of share contracts associated with the export commodities--the abusa system for cocoa in Ghana, and the navetane contract for groundnuts in Senegambia--as well as food grains, such as in Lesotho. During the colonial period, white settlers explicitly utilized share contracting in the so-called "squatting system" employed in Highland Kenya, the Shire area of Malawi, and the South African Highveld. Black farmers were supplied with land in exchange for fixed contributions of labor to the white landlord. Robertson sees indigenous African sharecropping systems, in some cases involving contracts long predating formal imperial rule, as systems to "release resources 'locked up' in individual households" (1987:25).

These sharecropping arrangements do not approximate contract farming in the sense employed in this report, since control at the point of production is wholly absent. Nonetheless, they illustrate an important point pertaining to the existence of the contract and its use in African society; indeed some contract-farming schemes have, in effect, employed customary or culturally informed notions of contract in dealings with growers (see Jaffee's and Horton's pieces in Volume II). There is, however, a history of contract farming in Africa that can, at the risk of simplification, be divided into a threefold chronology. First is the special case of Gezira as an early example of state-dominated contracting through tenancy. Second is the post-1945 growth of institutional (and especially finance capital) support for contracting through the Colonial/Commonwealth Development Corporation and the World Bank (IBRD). And third is the growth, most especially since the 1960s, of agribusiness forms of contractor-grower integration. It needs to be asserted that the chronologies are neither watertight nor exclusive, and both agribusiness and institutional-financial forces have operated in complex configurations.

5.2. Gezira

The emergence of an identifiable contract system did emerge in the 1920s with the consolidation of the Gezira Scheme in the Sudan. Established by the British colonial administration to produce Egyptian long-staple cotton, the scheme has currently grown to some two million fedans--the largest farm in the world under single management--accounting for 25 percent of Sudanese export earnings (Barnett 1977; Aricanli 1984). Since its nationalization in 1956, the scheme has maintained a tripartite form of organization among the government, the Sudan Gezira Board, and the tenants who are responsible for the cultivation of 20-acre plots. All irrigated land is under the management of the company, but many of the 100,000 tenants cultivating today have developed firm proprietary rights (Robertson 1987).

The Gezira scheme is an important case because it represents an early--perhaps the earliest in Africa--example of a production-contracting regime. Between 1927 and 1981,⁹ Gezira revolved around an annually renewable share tenancy in which the production schedule is determined by the Gezira Board. Under contractual stipulation, one-quarter of each holding must be allocated to cotton, one-quarter to wheat, and one-quarter to sorghum-groundnuts; the remainder is fallow. Under the share system, labor for weeding and harvesting was paid by the tenant; while credit for hired labor, spraying, and planting was handled by the management and charged to a joint account. All cotton is surrendered to the management, which it delivers to the cotton-marketing board. After subtracting costs, the net proceeds are divided among the three parties. Contracted cotton often brings only one-tenth or less of the returns from other commodities, but tenants unavoidably break the contract--and hence face eviction--if cotton is not planted in the right quantity and cultivated according to a proscribed, and tightly regulated, cultivation routine.

The Gezira scheme evolved into a centralized form of planned agriculture, and by the 1950s the degree of control exercised by the management evoked a "communist tinge" (Robertson 1987:93). By independence in 1956, the tenants had bargained to improve individual land rights, but were still subject to exactions and obliged to bear the considerable costs of economic uncertainty, variable yields, and price, labor, and weather fluctuations. Barnett's (1977) critique of Gezira in the 1970s revealed the management's concern for strict supervision, centralized control, and mechanization of the production process of contracted tenants. The Gezira scheme has unequivocally been a success in terms of delivering cotton to the world market, but a hopeless failure in terms of creating small-scale, self-sufficient cultivators (Isikdag 1986).

5.3. International donor capital (CDC and IBRD)

Gezira was an unusual contracting enterprise in terms of its genesis and because the growers were, at least for the first half-century of its operation, de facto tenants. The second phase of contract farming, emerging in the post-war period, is associated with private rather than state initiatives and focused quite specifically on landholding peasantries. The central institutional actors in contract farming since 1945 have been finance capital: the Commonwealth Development Corporation (CDC) and IBRD in particular. CDC's constitution and powers were laid down by Acts of the British Parliament to assist Third World economies by investing funds and operating "on broadly commercial lines." In 1982, CDC had 250 projects in 50 countries, with a particular geographic emphasis on Africa. The CDC has been especially active in promoting nucleus estate systems associated with industrial processing of sugar, tea, coffee, and palm oil produced by contracted outgrowers. Some 700,000 ha are cultivated by 584,000 smallholders on CDC nucleus-estate schemes (CDC 1984). Of the 34 outgrower schemes (see Williams 1985), 20 are in sub-Saharan Africa, 75 percent of which have nucleus estates and processing capacity. Perhaps the archetype of the CDC outgrower contracting system is KTDA, embracing 58,000 ha of tea, 39 factories, and 150,414 growers, in which CDC had a formative role in the early 1950s (Lamb and Muller 1982).

Fundamentally, CDC schemes are controlled-credit schemes in which CDC provides finance and management expertise to a statutory authority designed to regulate the project. CDC has established a set of criteria pertaining to contracting design and management--such as "growers should be represented on the Board," "farmers must receive a satisfactory crop price," and food self-sufficiency must not be undermined (CDC 1984)--but it is entirely unclear whether such criteria are systematically met. Most assessments of CDC projects have been limited in number and essentially little more than internal (i.e. self) audits.¹⁰

A second major impetus to contracting production through outgrowers was IBRD, beginning in a small way through tree crops in the 1960s, but most especially during the 1970s following the assertion of a smallholder focus in Bank lending. There are two sorts of integrated rural development programs that potentially embody contractual production relations: colonization and settlement schemes, and outgrower enterprises (van de Laar 1980:176). Between 1962 and 1975, the Bank loaned US \$429 million to 28 settlement projects, most particularly in the humid tropics. Chambers (1969) examined a variety of settlement schemes in Africa--most of which had not reached full production--and provided a typology of organizational forms. Those complex schemes--referred to as scheduled or communal schemes--with planned and controlled land boundaries, obligatory central

marketing, tightly regulated settler production activities, and shared output, were in effect contract schemes.¹¹

The second aspect of IBRD funding of production contracting is a variant of settlement schemes referred to as "outgrower" projects. Exclusively focused on tree crops, production is bifurcated between a central nucleus estate or plantation, usually with processing capability, and a smallholder-outgrower component articulated to the project via contracts. The Bank has contributed to at least nine such projects--at a total cost of US \$125 million of which the Bank has provided US \$86 million--affecting some 120,000 families. Over half of the projects are African: tea in Kenya and Uganda, cocoa in Cameroon and Ivory Coast, and oil palm in Ghana and Nigeria (see van de Laar 1980:183). In the nucleus schemes, a fundamental dynamic of Bank-funded enterprises has been the tension between the plantation/estate and outgrower organization (see also Palmer-Jones 1987). Conflicts may arise over the priorities between grower and estate when crop input exceeds processing capacity, and a struggle may develop over the control of the central processing unit and subsequent stages in the marketing chain, as actually transpired in the 10,000 grower Uganda Tea Development Authority, partially supported by IBRD.

IBRD had actively supported KTDA, and the International Development Association (IDA) wing of the Bank has financed smallholder tea in East Africa to the tune of US \$26.1 million. However, Bank funding of outgrower commodities has run aground on the reefs of Third World producer competition; India and Sri Lanka have been especially critical of Bank support for new tea producers in East Africa. The Bank's role in KTDA has generally been seen as a model success story, but the income of Kenya tea growers has been quite volatile and, in some cases, extensive incursions into local food production were made by expanded tea cultivation (Van de Laar 1980:185-186).

Since the mid-1970s, the Bank has provided substantial support to the West African, and specifically the Nigerian, palm-oil sector. The Bendel and Ondo State oil-palm project was identified in 1972, and is designed to establish 26,000 ha of high-yielding trees and four central milling facilities. The scheme consists of 12,000 ha of smallholder plots and 14,000 ha of nucleus estates. State ministries provided free palm seedlings and inputs and cash credit for labor, and the growers were obliged to provide labor and tools. All growers were required to be members of a registered cooperative that regulated production, extension, crop collection, and credit repayment (IBRD 1983). A similar project was initiated in 1975 in Rivers State under the auspices of a state-owned company (RISONPALM) that controlled a 10,000-ha estate and a 10,000-ha outgrower sector (IBRD 1978). Most palm-oil outgrower projects, including

those in Ghana (see Daddieh, Volume II) have experienced a lukewarm farmer response.¹²

In a new departure, IBRD has recently invested in a state-run contracting scheme in Cameroon distinguished both by the commodity--rice--and a highly centralized and regimented management system. The SEMRY project in Yagoua, northern Cameroon, accounts for close to 7,000 ha of irrigated-rice production. All decisions made by the corporation concerning the execution of agricultural work is binding on the growers; and the contract's specifications and enforcement have been especially rigorous (Tchala-Abina 1982:159). Although this contractual system involves no centralized estate or processing, it represents a new departure from the tree-crop focus of prior Bank funding, and it has marked similarities to the project described by Carney in Volume II of this report.

5.4. Three national overviews

The variability of contracting arrangements in Africa is such that there is no such phenomenon as a "representative" case. Rather, these three brief examples drawn from different parts of the continent are intended to convey a sense of the heterogeneity of contract farming between and within states and the differential contribution of contracting to national economies.

5.4.1. Kenya

Contract farming is more elaborated and more extensively developed in Kenya than in any other sub-Saharan African country. Contracting emerged from Kenya's colonial political economy and the dominance of estate- and plantation-production of coffee, tea, sisal, and other commodities produced largely for export. The watershed in estate dominance came with the Swynnerton Plan in 1954 and the political instability of Mau Mau immediately prior to it. The reforms stimulated commodity production for export based on smallholder production, which accounted for one-quarter of marketed agricultural output at the time of independence in 1963. Since that time, contracting of smallholders has expanded dramatically beginning with tea--a scheme targeted by CDC for special nurturing--for which there was a massive moral and financial commitment for its success. There was inevitable movement from plantation to contract farming--indeed, the production of pineapples changed from smallholder to estate production at the same moment that tea and coffee estates were being broken up and production was being encouraged among peasants--and, according to some commentators, the major growth of contracting occurred during the 1970s in the context of an impending crisis of smallholder productivity. The result has been an expansion of production contracting among a plethora of crops including tea, sugar, tobacco, oil seeds, and vegetables. Smallholder tea, which in 1980 accounted for 40 percent of Kenyan

tea output, is all produced under contract to KTDA; by 1981 close to 75 percent of sugar was cultivated by contract. Buch-Hansen and Marcussen (1981) estimate that 12 percent of Kenyan smallholders produced cash crops on contract to agroindustries in 1981, amounting to 30 percent of marketed output from smallholders and 17 percent of all agricultural output. A more recent calculation by Jaffee (Volume II) estimates that 16.7 percent of Kenya's 1.5 million smallholders are involved in some form of contract production covering five major commodity groups.

In Kenya the majority of contracting is linked to agro-industrial processing, often involving a European company or management firm as a joint venture with Kenyan Government equity participation. In contradistinction to other states, Kenyan contracting makes extensive use of large-scale growers: BAT Kenya contracts with large poultry producers, Kenya Brewers with large barley producers, and Oil Crops Development Ltd. intends to have 5,000 largeholders producing oilseed on 60,000 ha by 1988. During the 1970s, horticultural commodities and tobacco were growth sectors in contracting: Kenyan exports of fresh fruits and vegetables grew by 50 percent between 1975 and 1979 (to 21,000 tons). Jaffee (Volume II) estimates that there are at least 100 exporters of fresh fruits and vegetables currently operating in Kenya. Tobacco has also expanded rapidly since the disruption of Tanzanian and Ugandan leaf supply in the early 1970s. Concentrated primarily in four provinces, contracted tobacco grew from almost nothing in 1976 to 4,670 tons in 1982. According to Grosh (1986), social rates of return and efficiency of some of the Kenyan parastatals involved directly in contracting (Chemelil, Mumias, KTDA, and East African Sugar Industries) were quite impressive during the 1970s and early 1980s.

5.4.2. Nigeria

As the most populous, and in some respects the most important, state in sub-Saharan Africa, Nigeria does not approach Kenya in terms of the diversity and historical depth of contract farming. While the Nigerian state has been quite open to foreign capital--even during the halycon days of indigenization after the first oil boom--there has been a reticence on the part of foreign agribusiness to move into contracting on a large scale.¹³ However, the Land Decree of 1978 and the massive post-1982 austerity associated with growing debt and a declining oil market have prompted expanded government efforts for local industry to import-substitute its raw-material inputs, and to encourage agribusiness to invest in a somewhat stagnant export-agricultural sector to generate much-needed foreign-exchange revenues. As Beckman and Andrae (1985) point out, there have been renewed efforts to employ contracting among smallholders by both business and the Nigerian state since 1980, especially in textiles, brewing, poultry, and some horticultural industries.

In sharp contrast to Kenya, the plantation/estate sector for export commodities such as cotton, palm oil, and rubber was wholly undeveloped in Nigeria. Smallholder production had been the bedrock of the colonial political economy, and after independence in 1960 there was neither a substantial plantation sector to restructure nor a desire by the likes of CDC or private capital to move into contracting. There had been a series of smaller efforts in the 1960s, most notably the Nigerian Tobacco Company (NTC), the Bacita Sugar Scheme, and the Lafia Canning Project. NTC and its worldwide parent company had always been deeply involved in contracting, employing cooperatives as the basic organizing unit in Nigeria, and NTC has continued to grow on the basis of contracting; by the early 1980s it was contracting with 50,000 smallholders for some 14,000 tons of tobacco. However, the other contracting programs of the 1960s were small and largely unsuccessful by comparison; the Bacita sugar scheme, designed with the assistance of Booker McConnell, was a plantation system and only in the 1970s was a small (approximately 40 outgrowers) contracting component added to the nucleus estate. The Lafia Canning Factory, one of the very few efforts to employ contract production in the horticultural sector, was a catastrophic failure. Completed in 1960 to process 26,000 tons of fruit, the plant never exceeded 2,500 tons of processed crops (orange, citrus, and tomato); operating at only 3 to 9 percent of capacity over 20 years--the project survived only by virtue of its sponsorship by the Western State Government--the firm was losing US \$50,000 per annum throughout the 1970s (Samake 1980).

The 1970s did witness a rapid growth in public and private contracting but, unlike Kenya, it was rarely associated with nucleus-outgrower estates and almost never with the fresh fruit and vegetable horticultural sector. An effort to contract tomato production for a tomato-paste factory in North Central State--a joint effort between state government and Cadbury Ltd.--had commenced in 1971 and grew to some 960 farmers on 320 acres. However, the record of the Zaria Tomato Project has been ambiguous at best, and very few other investments have focused on the horticultural sphere. The growth of contracting appeared in relation to other commodities and was associated with the rapid expansion of both state capacity (and intervention) and of private capital growth following the 1973 oil boom. There have been four dynamic contracting sectors. First, in Bendel, Ondo, and Rivers States, IBRD--in conjunction with the Nigerian government and European management firms--has sponsored a series of oil-palm nucleus estate-outgrower schemes. Most projects began in the mid-1970s and involved estate and smallholder plantings of 6,000 to 8,000 hectares. However, since planting rates rarely exceeded 50 percent of initial project targets, and costs were 500 percent more than comparable Bank-funded projects in other West African states (e.g. Ivory Coast), the

implementation of the outgrower components generally has been considered a failure.

The second contracting frontier is associated with the controversial state-funded Bakalori irrigation project in the northwest, irrigating some 30,000 ha at a cost of US \$0.5 billion. The production of rice, wheat, and eventually sugar was to be undertaken through contract production, but by 1983 intense resistance to land appropriation and the project management's attempt to subordinate peasants more generally, has meant that "the entire nature of the project had changed" (Beckman 1985:28). A third focus has been the deliberate effort to encourage international agribusiness into agriculture, facilitated by state subsidies (e.g. the joint understanding of 1980 between USDA, the Nigerian government, and US agribusiness, see Watts 1986) and a new Land Use Decree (1978) that facilitates large-scale land acquisition. Tate and Lyle, Unilever, and John Holt have recently acquired large holdings to provide raw-material inputs for local industry, usually on capitalist estates. However, some initiatives have been made, such as the Texagri outgrower scheme, to employ contract relations as the basis for backward integration.

Finally, and perhaps most important of all, there has been a significant effort by local and international industry to move directly into the provision of raw materials. Throughout the oil-boom era, most industrial and processed raw materials were imported on license, but the drying up of credit in 1983 pushed the Nigerian Manufacturers' Association into raw-material production for local agroindustry. The government limited import licenses and in some cases gave forewarning that imported raw materials would be terminated (for example, wheat for the milling and bread industries). Many companies--7-Up, Lonrho, Holt--have gone to large-scale estate production, but others are experimenting with contracting. The two important cases are textiles and the brewing industry. A substantial number of the 32 operating breweries are contracting with growers of barley and sorghum--commodities that are contracted by brewers quite extensively in Latin America (Clapp 1987)--and large textile concerns such as Afprint, Nigerian Textile Mills, and Chellarams have moved into contracting since the old Marketing Board system has been a blockage rather than a facilitator of accumulation. The Nigerian Government has suggested that the crisis-ridden River Basin Development Authorities might be rejuvenated to assist private capital in contracting by using the irrigation infrastructure already intact (and the extension services) as the basis for smallholder contracting (Oriaku 1985).

While contracting has not been widespread or indeed comparatively successful in Nigeria, it is clear that the new austerity conditions and the move toward "industry goes farming" facilitated by severe import restrictions and state-led

privatization, suggests that contracting is very much the new frontier. This is certainly visible in the poultry industry--for the provision of maize feeds--and in textiles, but the potential is presumably enormous across the agroindustrial sector in Nigeria, which by 1980 exceeded 1,030 establishments and accounted for over 250,000 employees.

5.4.3. Swaziland

Swaziland has pursued an explicitly export-oriented and raw-material-based development strategy since independence. Swazi economic fortunes are deeply imbricated with South Africa through institutional connections such as the South Africa Customs Union and by direct investment and labor supply (in 1982, 18 percent of total Swazi wage labor was recruited to the South African mines). Until independence, South Africa provided 70 percent of all investment, but British companies dominated agriculture and banking. During the 1970s both capitals have increasingly penetrated the agroindustrial sector, which has become the backbone of the Swazi development strategy: for example, Anglo-American controls 90 percent of citrus production. It is estimated that 70 percent of the profits realized in the private sector went to foreign-owned companies.

Swaziland is an unusual case in relation to Kenya and Nigeria. As a Lilliputian state, it is fully integrated into South Africa and has pursued, even in relation to Kenya, an exceptionally open strategy with respect to foreign investment. This strategy has also assumed an extremely pronounced monocultural quality and by 1980 one commodity--sugar--accounted for 46 percent of foreign-exchange earnings. In addition, the dominance of sugar and agroindustry in general has unfolded in the context of a dual system of landholding and political control: on one hand there is a national trust (Tibiyo Takangwane) nominally owned by the Swazi but practically a fiefdom of the monarchy, and on the other hand is the Swazi State. Tibiyo was established in 1968 and has vigorously pursued a policy of alliance and joint ventures with multinational capital; by 1981 it held equity in 33 companies. The sugar industry, and agroprocessing more generally, is the lynchpin of Tibiyo investments. The Swazi state, conversely, has focused on integrated rural-development projects.¹⁴

A major thrust of the Tibiyo portfolio is estate production, but both Tibiyo and the Swazi state have a long-standing interest in contracting. In 1962 CDC, in conjunction with government, established the Vuvulane scheme, a sugar outgrower enterprise of roughly 4,500 ha. The scheme was rigidly centralized and closely managed by an expatriate firm; two-thirds of the landholdings were held, not by smallholders, but by "advanced Swazis" (Tuckett 1977:81) drawn from the ruling aristocracy. The CDC model has been used by Tibiyo and the state in other sectors; the Fourth

National Development Plan anticipates an expansion of contracting along Vuvulane lines (Levin 1986:248), and Tibiyo has, in conjunction with foreign capital, used contract relations in both its citrus and canning sectors. The entire agroindustrial strategy--which accounts for over 50 percent of Swazi foreign-exchange earnings--has been radically jeopardized by the post-1980 collapse of the sugar market and increasingly stringent EEC policy on importing horticultural products. The balance of payments crisis since 1978 has pushed the Swazi state into an uneasy alliance with foreign capital and an expanded use of contracting of cash crops.

In sum, this chapter has presented the historical and global dimensions of contract farming in Africa. It has demonstrated the linkages between investment strategies of advanced, capitalist countries and the emergence of contract farming in Africa. In addition, the chapter has shown how contract farming has become a major strategy in what is popularly referred to as the "dynamic partnership" between transnational capital and the smallholder. Contracting has become a central strategic means by which "reaching the small farmer"--the talisman of development theory in the 1970s--will be affected in the 1980s. The IBRD, the Berg Report, and several bilateral donors have lent considerable support to contracting and/or nucleus estates as the wave of the future. It is perhaps no surprise in this climate that contracting is becoming more widespread in Africa.

Endnotes

1. Interlinked contracts are defined as transactions in more than one commodity or service made between the same pair of individuals and linked in a way that contract delinking would be infeasible or costly for at least one party.
2. "The choice of contractual arrangement is made so as to maximize the gain from risk dispersion subject to the constraint of transaction costs" (Cheung 1969:64). Cheung thus raised the possibility of contracts being productive and preferred. Similarly, Newberry and Stiglitz (1979) argue that sharecroppers choose contracts because wage and tenancy contracts are productive.
3. Vertical coordination refers to the process by which supply and demand are adjusted toward each other with regard to product quality, quantity, location, timing, and so on. This coordination is transmitted along a vertical chain of functions from production to the point of consumption. The linkages along the chain tend to be problematic in agriculture by virtue of perishability, the biological growth cycle, geographic dispersal of production, and quality variation.
4. In the case of peas, corn, and beans contracted in the US, Pfeffer (n.d.) shows how contract clauses and risk distribution vary enormously both within and between commodities.
5. The concept of contract is exceptionally broad and indeed, for institutional economists, the basis for market exchange is implicitly contractual. Contract per se cannot be the basis for comparative analysis even in agriculture, and hence some (relatively arbitrary) taxonomy must be imposed. This constrained diversity is provided by our production-focused approach.
6. In the same way that sharecropping arrangements have been approached through a variety of theoretical positions, so contract farming is part of a large and confusing literature, which purports to explain the structural preconditions for the spread of production contracting. Some favor technology and commodity-driven models (Binswanger and Rosenzweig 1986), some emphasize contract "choice" and the function of contracts to assist actors of different resource endowments to arrive at appropriate combinations of income, risk, and effort (Glover 1984; Roy 1972), others posit market imperfections and asymmetric information as the key (Siamwalla 1978; Scott 1984), and political economists such as Wilson (1987) see technical economies of scale and market structures as only proximate causes derivative of "class relations between contractor and contractee."

7. On contract production of vegetables in Africa, see Jaffee and Horton in Volume II.

8. It should be emphasized that continent-wide generalizations of poor performance in the agrarian sector are difficult to sustain, and the stature of the most fundamental output data on staple commodities is so wholly unreliable that the veracity of the many "crisis analyses" must be subject to careful, indeed critical, assessment (Watts 1986; Berry 1984a).

9. Prior to 1927, the early phases of the Gezira system rested upon a fixed rent and wage system. After 1981, the share tenancy was converted to a flat-rate water and land charge.

10. The major review of CDC contracting undertaken by Mr. Ellman, a consultant to CDC, over the period from 1986 to 1988 is not available for public consumption. Some commentators have, however, identified important discrepancies between the CDC scheme criteria, purportedly in the interests of the smallholder, and the reality of project functioning (see Levin 1986).

11. According to van de Laar (1980:177) and Chambers (1969), most settlement efforts and the "complex" schemes in particular have performed poorly. In any case, evaluation has not been rigorous and the projects themselves have been shackled by organizational and administrative problems, lack of central authority, incorrect labor estimates, and low cost recovery (van de Laar 1980:177). Scudder, under SARSA's settlement research theme, is currently writing an overview of the experiences of settlement projects in the tropics.

12. According to the bank audit (IBRD 1983:57), the poor grower response was explained by: (1) the inability of some farmers to wait four years for the first capital return; (2) limited profitability due to increased labor costs and poor administration of credit; and (3) difficulty in access to community lands for large-scale planting.

13. The anarchy of public infrastructure, the corruption of administrative practice, and the sheer difficulty of conducting normal business operations (for example, efficient exporting of fresh produce) has naturally contributed to the paucity of foreign investment.

14. The parallel system of political economy originated in the division of land into freehold and Swazi Nation Land in the 1880s (Levin 1986).

CHAPTER III
THE GROWTH AND SUSTAINABILITY
OF CONTRACT FARMING

1. Introduction

The previous chapter showed that production of tropical agricultural commodities under contract has grown considerably in Africa over the past forty years.¹ The total tonnages and variety of commodities produced under contract, as well as the number of contracts let, have shown dramatic growth. This chapter will attempt to explain the growth in contract farming in Africa, with an emphasis on the economic and policy factors responsible for its emergence. Under what conditions does contract farming emerge and what factors help explain its sustainability (or non-sustainability)?

Examining a list of contemporary African contract-farming projects, one finds that the majority have some public involvement (see Table 6.1, Chapter VI; Minot 1986a). Because the objectives of governments differ from those of business, other standards need to be used in determining its selection as a tool, different from those conventionally employed in market analysis. Governments may use contractual arrangements to assure that one rural target group (or area) benefits from an investment. Or, contract-promoted production may be encouraged to serve policy objectives such as import substitution, export promotion, or self-sufficiency in staple foods. As a result of the multiple (and sometimes politically based) objectives pursued in government support for contract-farming projects, crops may be contracted in African countries with few characteristics similar to those normally contract grown in developed economies. In some instances, contracts have been used to promote production of crops--such as rice (see case study by Carney in Volume II)--not grown under contract in developed economies. However, such cases are exceptional, and the wider pattern of contract farming in Africa does fit the pattern found elsewhere in the world.

In examining the economic conditions associated with contract farming, attention should be directed to the need for generating agricultural surplus. In this respect, contract farming is an appealing approach for certain commodities, especially when compared to available alternatives. These alternatives include: (a) state farms or private estates/plantations integrating production, processing, and marketing; (b) production "by decree" whereby the state strongly regulates what crops should or should not be produced; (c) targeted support for "progressive" and large-scale farmers; or (d) reliance upon the market mechanism to provide appropriate production incentives.² We will show that under certain economic and

political conditions these alternatives are inappropriate, in terms of efficiency and equity considerations.

2. What Commodities Are Grown under Contract Farming?

Several criteria limit the kinds of commodities produced under commercial contract conditions, outlined below, to which the majority of the case studies conform. With the inclusion of government among decision makers, however, the criteria for choice are relaxed to a significant degree.

2.1. What are the conventional characteristics of the contract commodity?

Commodities conventionally grown under commercial contract share a number of points in common, even while they differ widely among themselves (Goldsmith 1985). Such common characteristics include the following:

(1) They are almost all destined for processing--to be canned, dried, cured, crushed, or concentrated--to be turned into different products.

(2) Alternately, contracted commodities are exported fresh to produce markets abroad. Processing and/or an export orientation tend to require a careful scheduling of raw-material supplies in order to maintain a high and stable input into the processing facility and to be able to engage in trade when "market window" opportunities are available. Processing and/or an export orientation also tend to require specifications on quality characteristics of the raw material supplied. Contract-produced commodities are heterogeneous within their own groups (grains are, by comparison, quite homogeneous). Processors or buyers of fresh goods are very grade conscious; contracts typically provide guidelines that allow a commodity to be classified (and priced) according to some criteria--such as freshness, wilt, fragrance, appearance, color, weight, moisture content, odor, absence of blemish, and shape. The buyer may apply penalties to the degree the product differs from the standard.³ Because spot markets do a poor job transferring information from buyer to seller in the case of heterogeneous commodities, and thus do not transmit important production or quality signals, "spot market prices" are relatively inefficient in the promotion of vertical coordination (Minot 1986).

(3) Contract commodities are also perishable--sustaining substantial loss in value as the time lengthens after harvest. Contract commodities frequently cannot be stored in their raw form. Oil-palm fruit, for example, must be crushed within a few hours of picking. Tobacco and tea leaves, cut flowers, and vegetables begin to deteriorate immediately and, unless

protected, their value begins to decrease within hours. Similarly, in the case of animal products, broilers can sustain important losses while being taken to slaughter, unless the facility is very close. Slaughtered birds and fresh milk require expensive preservation. Where the market value of a commodity/product is closely linked to certain quality characteristics, a commodity's high perishability should call forth risk-reduction and revenue-enhancing measures by farmers and buyers. Farmers will seek to guarantee market outlets and prompt collection or delivery of raw materials, while buyers may find it economic to develop more elaborate crop-collection systems.

(4) Many of the commodities grown under contract are tree crops with long gestation periods or are crops with extended production cycles. Commodities that have long production cycles often face complex markets, and processors need precise supply timing (Williamson 1971). For crops with long gestation periods, contracts provide some medium-term security for the grower who is using resources and expending effort for several years before obtaining a return on the crop. For crops with long production cycles, growers seek contracts to provide some market stability. Similarly, if in short supply, or when increases in production may not appear for years, buyers use contracts to secure a reliable supply. Tree crops vary from other commodities in that they typically do not require intensive use of labor or careful husbandry.⁴

(5) Typically, commodities grown under contract have a high market value per weight or volume unit compared with feed grains, hay, forage, and food grains. Further, the value of the commodity after processing can be very high indeed. Jointly, these characteristics provide the opportunity for obtaining adequate returns even when a relatively elaborate raw-material-collection system is needed. The characteristics help ensure that processing will be close to the production area relative to final consumption, and it ensures that the total market area can be large--the final price allowing for a good deal of transport expense. The propensity for quality deterioration makes contiguous production and processing especially important.

In sum, contracted commodities are distinct from agricultural products as a whole in at least five important ways. Because these commercial characteristics cannot be efficiently directed by spot-market price signals, production is managed through contracts.⁵

2.2. Which commodities are usually grown under contract?

Relatively few commodities are typically grown under commercially prompted contracts, and the list of contracted commodities differs somewhat between those grown in low-income

countries and those grown in the United States (or a similar high-income economy). Table 3.1 divides commodities between vegetable and animal products, and shows the percentage of farm output produced under contracts in the US. The table shows that production and marketing contracts are most important for sugar beets, fluid-grade milk, broilers, and vegetables. Tobacco and oilseeds are not often contracted in the US, although a small, but rising proportion of cotton is. The table generally overstates the importance of production contracts since many of the contracts being considered are purely forward marketing arrangements involving little or no buyer participation in the production process. Such marketing contracts are common for citrus fruits and fluid-grade milk.

In Africa, tobacco, sugar, tea, cotton and oil seeds (coconut, sunflower and oil palm) are grown on plantations or under contract. Vegetables for processing are also grown under contract in a number of African countries. On the other hand, broilers and eggs are grown for sale almost entirely without the benefit of contracts, and contracted milk production and the finishing of beef cattle in feedlots is unusual.

Table 2.1 (Chapter II) shows that at least sixteen different commodity types are currently cultivated under contract in Africa. This inventory (see also a detailed, but partial, list by Minot, 1986a) points out the extent to which contracting has moved from the "classical" commodities such as tea and sugar that have historically been associated with outgrower production, to more experimental efforts in staple foodstuffs and horticultural commodities. In the most developed cases such as Kenya, Swaziland, and Zimbabwe, a considerable proportion of total agricultural output--and particularly foreign-exchange revenue--is provided through contracting schemes. Table 2.1 also conveys a sense of the variety of size and organization among contracting schemes. Large joint ventures, often with processing capability (such as the KTDA scheme in Kenya), may absorb close to 150,000 growers; some of the fledgling horticultural exporting schemes in Senegal contract with only two or three dozen farmers. Similarly, the organizational forms are extremely varied in terms of ownership, contract provision, and market destination (see Table 2.1), and also in terms of the organizational structure of the scheme. Following Williams (1985), Table 2.1 employs a simple taxonomy based on the presence or absence of a nucleus estate, the presence or absence of a central processing unit, and the degree of centralization of growers (this is discussed at length in Chapter V).

Table 3.1

Percentage of Farm Output Produced under Contracts (United States) (percentage)

Products	Production and Marketing Contracts ^a		
	1960	1970	1980
<u>Crops</u>	11.6	12.4	16.7
Feed grains	.1	.1	7.0
Hay	.3	.3	.5
Food grains	1.0	2.0	8.0
Vegetables for fresh market	20.0	21.0	18.0
Vegetables for processing	67.0	85.0	83.1
Dry beans and peas	35.0	1.0	2.0
Potatoes	40.0	45.0	60.0
Citrus fruits	60.0	55.0	65.0
Other fruits and tree nuts	20.0	20.0	35.0
Sugar beets	98.0	98.0	98.0
Sugarcane	24.4	31.5	40.0
Cotton	5.0	11.0	17.0
Tobacco	2.0	2.0	2.0
Oil-bearing crops	1.0	1.0	10.0
Seed crops	80.0	80.0	80.0
Other crops	5.0	5.0	5.0
<u>Livestock</u>	27.5	29.2	33.0
Fed cattle	10.0	18.0	10.0
Sheep and lambs	2.0	7.0	7.0
Hogs	.7	1.0	1.5
Fluid-grade milk	95.0	95.0	95.0
Manufacturing-grade milk	25.0	25.0	25.0
Eggs	5.0	20.0	45.0
Broilers	93.0	90.0	89.0
Turkeys	30.0	42.0	62.0
Other livestock	3.0	3.0	3.0
<u>Total farm output</u>	20.6	22.3	24.8

Source: Marion 1986:15.

^aVertical coordination of farm production and marketing under agreements between farmers and processors, dealers, cooperatives, or others.

^bOmits forest, greenhouse, and nursery products.

2.3. Who initiates the contracts?

The use of contracts is affected by: (1) the identity of the institution that seeks out contract partners; and (2) their motives. The case studies of contract farming suggest that contracts in Africa have commonly been initiated by a national government, which then chooses a foreign partner to implement an activity that will attempt to find an intermediary, such as a cooperative or farmers' association, to actually arrange for production.⁶

2.3.1 Government promotion of contract farming

Governments' motives for contract farming vary. Import substitution takes the lead as a means to promote national production. Examples include Nigeria (tobacco by BAT [British American Tobacco Company] and tomatoes by Cadbury), Ghana and Ivory Coast (palm oil, with multinational partners or the World Bank), The Gambia (rice, involving the government with donors) and Kenya (sugar by Booker McConnell and oilseeds by East African Industries and various donors). Governments also have sought export promotion via contract farming. Examples include cotton in West Africa, tea in Kenya and Malawi, and fresh and dehydrated vegetables in Kenya.

From the standpoint of pure production and supply, the import-substitution schemes have largely succeeded, although often at an exorbitant financial cost. In the Ivorian case of palm oil and the Kenyan case of sugar, nucleus estate/outgrower schemes have led to dramatic production gains and imports of these commodities have been reduced to a fraction of earlier levels. For example, in the Ivory Coast imports of palm oil have been reduced by a factor of approximately three (in a period of 15 years); and Kenya is currently self-sufficient in sugar. Regarding the latter, the high costs of producing sugar result in low and even negative returns, but the government is committed to maintaining self-sufficiency in sugar (Kenya 1986:77). As we will discuss later in the chapter on regional development (Chapter V), these expensive, import-substitution schemes have generated only minimal local and regional multipliers, especially given their high capital costs and the revenues they generate.

The promotion of rural development, particularly the generation of increased farmer income, plays a secondary role in many government contract-farming initiatives. Kenya's program to create a large-scale smallholder tea-producing sector is perhaps the best example. Governments have sought to associate a sectoral economic goal with a social one by promoting a contract link between buyers and farmers. Other examples include poultry, rice, palm oil, sugar, tomatoes (for paste), and tobacco, where rural development gains have been a coproduct. We will argue

later in the report that government participation is often required to insure that contract-farming schemes have a favorable development impact.

2.3.2 Private-sector responses

Only a few of the case studies reveal a multinational company initiating a contract-farming scheme largely or wholly independent of an active role by government (see discussion in Chapter IV). Private firms develop contractual links with outgrowers when, due to economic, political, or managerial reasons, estate production is not viable, or when market purchases are unlikely to provide the necessary raw-material volume, timing, and quality. Some private contract-farming schemes are essentially new ventures for the firm in a sector or country. Other schemes result from dissatisfaction with existing commodity-procurement systems. An example of an essentially new venture is that of Saupiquet, the French canning company, in Kenya. In the mid-1970s Saupiquet did purchase canned French beans from a Kenyan processing firm, but this relationship was discontinued. In the early 1980s Saupiquet found another Kenyan partner who owned a cannery. Together they established a subsidiary operation, Hortiequip, to actually coordinate the farm production of French beans. This firm, rather than dealing indirectly with farmers via cooperatives, chose to contract directly with them. This approach was adopted because of poor prior experience of French-bean contracting in Kenya using cooperatives as intermediaries.⁷

BAT, with its operations in such countries as Nigeria and Kenya, is an example of a multinational firm that was already locally established but wished additional supplies or alternative sources for those supplies. For this company, contracts have proven to be a useful approach and have received official (if passive) blessing.⁸

There are no clear examples among the case studies of buyers who simply sought to diversify supply, which implies an allocation of risk.⁹ In very few cases, developer-buyers sought to diversify supply--tea (Kenya and Malawi) and palm oil (Ghana and Ivory Coast), where core plantations were established together with outgrowers--but the motive appears to have been rural development rather than diversification similar to banana production in Central America. In one instance in Ghana, the implementing company decided against the use of outgrowers and instead purchased its supplement on the open market (Daddieh, Volume II).

In sum, a large number of contracts negotiated in African countries result from public initiatives whose objectives conform to conventional ones in only a limited degree. In many instances, private contracting firms act as agents of national

governments in pursuit of public goals with the private firm being paid management fees and sometimes handling downstream product marketing. Private-public joint-venture schemes have mixed commercial and noncommercial objectives.

3. What Does a Typical Contract Include?

Contract terms vary depending upon the commodity and circumstance, nevertheless, most share certain points in common (Glover 1984; also see discussion in Chapter IV).¹⁰ Generally speaking, contracts cover one production cycle, are signed at planting, and the price is usually fixed at that time. The buyer usually agrees to advance credit (probably in kind), supply inputs (usually at cost), and provide technical help in production. When quality considerations are paramount and/or the crop is new, the buyer may supervise production--sometimes in detail. The buyer usually also reserves the right to reject produce at harvest if it does not conform to certain standards (that may be very subjective; see endnote 4).

Contracts span a considerable range in rigor of control (Tang 1985). Under a full management contract, prices are fixed at planting time and the company exercises constant supervision over the production process (management issues are discussed in detail in Chapter VI). They may provide all of the inputs used, and either provide planting and harvesting equipment or actually carry out the operations. Contracts may involve a number of possible combinations such as guaranteed income, guaranteed market and variable price, or guaranteed market with first option to buy. Cases in which the contractual framework is particularly intense include sugar in Kenya (Scott 1982) tobacco in Nigeria and Kenya (Buch-Hansen and Keiler 1983; Shipton 1985) and rice in Cameroon (Jones 1983).

At the opposite pole is the "limited" contract in which the company pays market price at delivery time and exercises little or no control over the production process. This form is most common when the commodity is nonperishable and destined for processing, or when market prices do not fluctuate greatly during a buying season. Examples include the contracts between buyers and producers of poultry products in Senegal (Billings, Volume II). These are essentially "market" transactions, although they may take place within the context of an ongoing relationship. In these types of arrangements the distinction between "market relationships" and "contract farming" may become blurred.

Overall, the complexity of a contract and the intensity of the farmer-buyer relationship increases as the gap widens between the specifications of the commodity and the experience and technical sophistication of the producer. Contractual complexity

also tends to increase when the availability of suitable raw material on the market is lower (Kane 1987).

Contract prices are calculated according to some perception of the state of the market at harvest based upon the current price level. A variety of pricing formulae are used: (1) a fixed differential with respect to a current price; (2) a going price within some agreed range; or (3) an average price taken from several quotations (e.g., tea in Malawi).

Caveats may also be included. In Ghana (Daddieh case study in Volume II), farmer tenants on palm-oil projects agreed not to intercrop food crops under the trees. Many of the projects examined in the present context put limitations on the amount of land that could be devoted to a contracted crop. This stricture served two purposes. First, it provided some control upon overall supply. Second, it kept the production plot within the resource capacity of the farm household, particularly in regard to labor. Contracts almost always specify that the producer sell only to the contract-buyer.¹¹ The contract may also provide that the same commodity not grown under contract terms will not be sold to the buyer.

No contract was identified that included any element of income insurance for farmers. In the event of adverse weather, outbreaks of disease, or provision of poor planting material and other inputs, farmers may be forgiven for loans or granted a more extended payback period. However, most contractors have absolved themselves of responsibility for poor technical assistance and inputs, as no contract guarantees a minimum return to farmers who are adversely affected by circumstances beyond their control.

4. Economic Motives of Buyers in Contract Farming¹²

Contracting is most commonly practiced by food-processing firms. Since their plants have high fixed costs, these firms have an interest in keeping raw-material inflows at a steady level close to plant capacity. Open-market spot purchases are unlikely to satisfy this need (Glover 1984). Among the commodities examined for this study, many involve some form of factory processing: French beans, canned and exported (Kenya); tomatoes, concentrated, canned and locally sold (Nigeria); milk, pasteurized, bottled, and locally sold together with milk by-products (India); sugar, refined and locally sold (Kenya); palm oil, crushed and locally sold (Ghana and Ivory Coast); and vegetables, dehydrated and exported (Kenya). In addition, tea and tobacco are cured and then either packaged (tea) or put through additional processing into a variety of products (tobacco).

In only two cases, Kenyan and Malawian tea, were contracts used to supplement a well-established plantation system of long standing, and in both cases the decision to expand and include smallholders was largely political. Palm-oil plantations were, for the most part, newly established since independence, with a view toward import substitution. In one case, Ghana, state-operated farming simply had not worked (Daddieh, Volume II). Both Ghana and Ivory Coast, with substantial financing from the World Bank, have developed core plantations, but the respective governments decided to add outgrowers as part of a development strategy. A similar history can be found in the case of the Kenyan sugar industry (Dew 1978). A different approach can be found in The Gambia (Carney, Volume II), where a settlement scheme has been established to grow rice to supplement smallholder sales and to replace imports of the commodity.

Processors are not alone in seeking contract supply; exporters of fresh commodities do also. The case studies include examples from Senegal and Kenya, where substantial exports of fresh fruit and vegetables takes place. Buyers argue that the contract is an efficient and reliable way to obtain the required quality and quantity when it is needed, and at a reasonable price. Contractual relations are especially important (but more difficult to sustain) when the structure of the export trade is highly competitive. Exporters use the contracts to tie in suppliers. Contracted growers then provide a large proportion of procurement needs with the balance being obtained through the market (Jaffee, Volume II).

Why have contracts been specifically let to small farms? The reasons are somewhat different from those found in the textbooks (such as risk or diversification of supplies). The very large role played by the government cannot be over-emphasized, whose reasons include the desire to: (1) generate state revenue and, in some cases, reduce imports; (2) develop relatively backward areas that have production potential; and (3) increase rural incomes, particularly among traditionally neglected groups. In addition, (4) many of the best production areas may be occupied by small farms; (5) the technical needs of the crop may call for intense work of the sort done well by the family farm, such as tea plucking; and (6) smallholders may accept lower prices in exchange for reduced risk (most of the vegetable projects depended upon farmers' acceptance of this logic).¹³

The terms of the various contracts negotiated between buyers and farmers endorse the view that processors enter into contracts for the usual economic reasons: (1) buyers want a reliable supply of a commodity whose supply may be volatile; (2) they want this supply to conform to a reliable standard; (3) they need the flow of input to coincide with processing needs; and (4) they want to

accomplish the above at an acceptable cost, which may include savings from not having to manage production (Minot 1986).

5. When Contract Schemes Are Unsustainable

Although there are powerful motives promoting contract-commodity production, there are reasons why contract performance varies considerably in many particular instances. The viability of contractual schemes may be undermined by (1) opportunistic behavior by farmers; (2) a poor technical package or poor management on the part of the contractor; (3) unfavorable market conditions or changes; and (4) limitations on the natural resource base.

5.1 Opportunistic behavior by farmers

Farmer opportunism in any form reduces the advantages of contracting for the buyer because procurement costs may rise and prospects for obtaining the necessary volume and quality of raw materials is reduced. A poor technical package or management structure reduces farmer productivity and returns (and thus interest in the contract), and increases the firm's procurement costs (see discussion in Chapter V). Changes in factor and product markets may alter the wider incentive environment faced by the firm and/or farmers, rendering certain contract terms unenforceable and perhaps the entire project economically marginal. Where farmer opportunism, unsound technology or management, or market changes render a project economically marginal, the sustainability of such a project may depend upon political will (Palmer-Jones 1987; Jaffee, Volume II).

Regarding farmer opportunism, the most critical problem is that of "leakage." If the buyer cannot control leakage, either in or out, the contract will probably not accomplish its purpose. The problem persists because alternative markets exist.¹⁴ Where alternative outlets do exist, the farmer must frequently choose between the penalties following a broken contract and the loss of income. In actual fact, penalties may not be severe, and if the farmer sells only a part of her/his crop to other buyers the contractor may have difficulty detecting such leakage.

We observed opportunistic market behavior by oil-palm producers in Ghana; vegetable growers in Kenya and Senegal; and rice growers in Gambia. In each case, the farmer found more lucrative, alternative markets and consequently the scheme had great difficulties in procuring supplies from farmers. For example, in The Gambia much of the rice produced on the Jahaly Pacharr scheme ended up in Senegalese markets, where it could be sold for "hard currency" and at a higher price. Our analysis of the horticultural sector in Kenya, on the other hand, showed how market leakage among vegetable growers forced agroprocessing

firms to reduce production levels and, in some cases, to close. It should be noted that "controlled" production schemes in Africa (whether contract or another form of production) frequently have problems regulating market behavior of farmers. Our study shows that rather than blaming the farmer for choosing the best return for his labor, the firms should be held accountable since they frequently underestimate the real opportunity costs for the contracted farmers. The risk of market opportunism among farmers, which can emerge on any type of production scheme (Little and Horowitz 1987), makes certain firms reluctant to invest in areas where competitive markets exist, favoring the more remote areas where alternative markets are likely to be few.

The basic problem appears to be that significant risk is added to a contract relationship when the buyers' and sellers' motives for engaging in a contract are fundamentally different. The objective of (African) small farmers is to add an extra safety net to their survival program, as well as to increase income. When accepting and implementing the contract, the farmer is faced with a series of important resource-allocation decisions--how best to use cheap fertilizer provided under the contract (should she/he sell it off and depend upon residual fertilizer from last year's crop?); how best to allocate scarce labor; and how intensely should the contract crop be cultivated with respect to other crops and opportunities? What if price and production assumptions made at planting prove seriously amiss at harvest? Rational answers may cause serious misgivings with respect to contract commitments.

Farmers with a more opportunistic turn of mind may consciously accept a contract for the purpose of obtaining cheap inputs, while planning to sell outside the contract, which would allow them to avoid deductions for repayment, while using the contract as a buyer of last resort should market prices fall below contract levels. They will honor the contract to the extent that it is in their short-term interest. Buyers must take into account their partners' objectives, and make allowances for them in the incentive package they provide if the risk of a broken contract is to be minimized. If the price for doing this appears to be too high, the buyer should consider alternative or diversified sources of supply.

The differential between contract and market price may not be the prime factor leading the farmer to sell to alternative buyers. By selling elsewhere the farmer may avoid having to repay input loans, or avoid having to repay other debts (including general expenses) to cooperative intermediaries. The buying practices of a contractor staff may or may not be more fair than those of market traders. Price differentials may thus be accentuated or compensated for by differences in practices with regard to weighing, quality evaluation, or payment periods. Contract buyers frequently do not pay at the moment of delivery.

Tardy payment, especially when the farmer knows it will be a relatively low payment, is a strong disincentive to honor the contract. There are many instances where the type of intermediary selected by the buyer has directly and adversely affected contract performance.

5.2 Poor management on the part of the contractor

If the contract initiator did a poor job in his/her evaluation of market price when a fixed price was chosen, it is unlikely that the contract will be honored at harvest time. Or, enforcement may cost more than it is worth. Buyers have become increasingly sensitive to farmers' needs, especially when a contract is made in association with a larger scheme. In such cases an in-depth study is made of the producers, which should reveal their concerns and options. It is possible that the spotty pattern of dishonored contracts reflects as much on how well contract-makers study a situation as it does on farmers' commitment.

Occasionally, buyers have done a poor job supporting contracts. Examples include poor technical support, inadequate provision of inputs, late collection of harvest, failure to communicate, as well as poor selection of ground staff to implement the contract (see Kenyan and Gambian case studies). Cases exist where dishonest staff members have provided poor service to farmers and have cost contractor firms considerable sums. The skills, interest, and integrity of field staff will vary, with some farmers being adequately assisted with technical advice while others are not.

Management structures of most contract schemes are highly centralized, allowing little participation by producers in scheme policy and decision-making. Many contract-farming schemes do not allow the formation of participatory organizations by farmers. Schemes that enforce top-down management styles have experienced long-term difficulties; farmers have withdrawn from schemes and/or sought alternative market arrangements, jeopardizing their economic viability. This has been the case, especially for agroprocessing projects in Africa, where schemes have paid prices to farmers below production costs, and thus have been unable to procure supplies sufficient to operate the factory.

5.3 Volatile market conditions

Market risks and changing market conditions can undermine contract farming schemes, even when other problems (management, technical, etc.) are minimal. Such market risks or unforeseen changes may not only increase conflict within the contractual relationship, but may render a wider project economically marginal. The case of Asian-vegetable schemes in Kenya shows the

effects that volatile international markets can have on contract schemes:

On the demand side Kenya is beginning to face increased competition from European and non-European sources for okra and chillies. While Kenya still retains a comparative advantage due to its inability to provide the full range of Asian vegetables, many alternative sources are beginning to eat away at the virtual monopoly position that Kenya once held in this market. Importer dissatisfaction with the reliability and continuity of supplies as well as the uneven quality of Kenyan produce is pushing this source diversification at a faster pace (Jaffee, Volume II:86).

Increased instability and competition in the international market for Asian vegetables has led to volatility in price and incomes for farmers. The international dimension is beyond the control of local firms and farmers, but nonetheless affects the operation of Asian-vegetable schemes. While the schemes have generated significant short-term incomes for farmers and firms, they are unlikely to be sustained because of the likelihood that the "Kenyan export trade in Asian vegetables will decline" (Jaffee 1987:111). In the case of Kenya French-bean production, the rapid growth experienced in past years has now leveled off (see Figure 3.1), and is unlikely to expand significantly in the future due to increased international competition. In our case studies of tea (Malawi) and oil palm (Ivory Coast), we also found the volatility of external market factors to affect the sustainability of contract-farming schemes. The instability of these markets, however, was not as great as for horticultural products.

A related market factor that affects the sustainability of contract farming schemes is the availability of international transport. For the export of perishable commodities, such as horticultural products, the availability of international transport services may be uncertain. Our case studies of vegetable trade in Kenya and Senegal showed that limitations on international cargo space was a major problem to the expansion of trade in certain vegetables. It should be noted that air-cargo constraints are likely to be considerably less in Kenya and Senegal, than in most other sub-Saharan African countries. Recent entries, such as Burkina Faso and Mali (with minimal air links to international markets), will probably face major transport problems.

Transport risks associated with the fresh-produce market must be borne by the exporter or the contracted farmers with potential losses being considerable. How such risk is distributed will be a source of conflict. In these same cases the sector may be targeting certain overseas market windows. The

timing and remuneration of such windows may vary from year to year, perhaps depending upon weather patterns in the importing country/countries.

5.4 Natural resource factors

The level of resources allocated to field research under this project did not allow an in-depth exploration of the environmental implications of contract farming. This would have involved a range of different disciplines (e.g., forestry, ecology, and agronomy), for which the original terms of reference never requested, as well as longer-term fieldwork (at least 12 months per case study) to properly identify resource trends. In addition, the literature on contract farming in Africa is almost completely devoid of references to natural resource management issues and, thus, secondary sources were of little assistance. This section on natural resource issues associated with contract farming does not do proper justice to the importance of the topic, and we would suggest it as a subject for separate investigation in the future. The topic has special importance today as many African states, with financial difficulties, are intensifying export-crop production on contract and other types of commercial schemes. Pressures to generate foreign earnings are likely to result in land-use patterns better suited for short-term profitability, rather than long-term sustainability.

The production and processing of contracted commodities are resource intensive, which raised problems of sustainability in certain of our case studies. For example, a major problem in the Malawi Smallholder Tea Authority Scheme has been its expansion into marginal agricultural areas. The available technical package for tea in these areas has proved inappropriate and problems of soil erosion have emerged. Similarly, the contract farming of oil palm in Ghana and Ivory Coast has led to the destruction of thousands of hectares of tropical forests, which is unlikely to be tolerated in the future by the external donors funding these projects. These soils are often fragile, and scheme operators prefer expanding into new areas rather than intensifying production on existing lands. In terms of improvements in the land base, Daddieh found very little difference between oil-palm and other growers, particularly in terms of husbandry practices (see Volume II). Given the rapid deforestation in Ghana and the Ivory Coast, the option of expanding into new forested lands may no longer be available in the near future.

Another contracted commodity that places large demands on the resource base is tobacco. This crop demands considerable fuelwood for its curing. In Kenya, for example, farmers are required to cure this product on-farm, and acquiring sufficient fuelwood for the curing process can be a major problem. There are now areas of Kenya where plans for contract farming of

tobacco have been discarded because of the lack of trees; and other areas that are likely to go out of production soon because of fuelwood shortages. One consequence of the wood shortage has been greater time expenditures on fuelwood collection and gathering (often by women) (see Smart 1981). The fuelwood problem is recognized both by the Kenyan government and BAT, the major firm involved in contract farming of tobacco. BAT recently initiated, in collaboration with the government, an ambitious agroforestry program to increase tree planting among contract growers. It is too early to assess the impact of this program.

Some contract crops--most notably tobacco and cotton--are very exacting on soil and are known to create potential problems when mono-cropped (Smart 1981). They require considerable inputs of fertilizer and herbicides to maintain levels of production, and this can result in severe ecological problems. Bassett (1986) and Currie and Ray (1986) refer to such risks in Ivory Coast and Kenya, the former documenting the growth of weeds associated with fertilizer use and the corresponding increase in herbicide applications that generate local toxicity problems. Obiero (1980) refers to drinking-water problems associated with excessive fertilizer use in the contract-sugar-growing areas of western Kenya. In light of the increasingly high costs of fertilizers and herbicides in Africa and their effect on local ecology, contracted commodities that require considerable amounts of these inputs could prove economically and/or environmentally unsustainable.

6. Chapter Summary and Conclusions

The production and marketing of tropical commodities has shifted during the last forty years from one of vertically integrated plantation operations to a pattern wherein ownership and management may be separated, and production diversified among a variety of producers. The shift has occurred irrespective of the nature of the market--local or export--or whether the commodity is to be processed or sold fresh with a very short shelf life. It has occurred in apparent disregard to the identity of the ownership of the processing capacity; public or cooperative, local private, or multinational firm. Foreign firms, which formerly would have invested in local production facilities, now seek management contracts from national owners.¹⁵

While vertically integrated raw-material production has become vulnerable and thus more uncertain, vertical coordination by other means has become more important and buyers have diversified their suppliers.¹⁶ Plantations have spawned networks of private outgrowers whose systems are being supplemented, and in some cases replaced, by outgrower networks linked to core production systems by contracts (Glover 1984; Goldsmith 1985). Production of commodities by farmers on contract to processors

has been widely accepted as an effective solution to the procurement problem. However, a key variable is whether the processing firm can establish an effective input supply, extension, and produce-collection system to provide farmers with the incentive to maintain ongoing transactions with the factory rather than selling on the open market.

Many national governments have adopted the mechanism as a means to simultaneously satisfy political and production objectives, and have come to see that contract production holds important potential for agriculture development generally. Parastatal production schemes, for example, use contract-tenancy as a means to assure production of targeted crops (Daddieh and Carney, Volume II).

Under what conditions does contract farming become established in a low-income economy? The evidence at hand suggests that contract farming is becoming an important vehicle when a buyer wishes to establish a reliable supply of a commodity where it has not been produced before, and when the buyer wishes to be able to secure a claim to a stream of production or marketing. The underlying purpose of a contract in a low-income economy may be more complex than in a rich one where it is quite straightforward--reliable supply and markets. Production may be the means towards public ends--promotion of export earnings, reduction of imports, increase in food self-sufficiency, improved nutrition, increased rural and farm incomes, and area development, to name the most important.

We have argued in this chapter that at least four factors effect the sustainability of contract farming schemes: (1) market leakage among farmers; (2) scheme management; (3) external market environment; and (4) the natural resource base. Among these perhaps the most important is the external market, which can jeopardize even well-managed and organized schemes.

ENDNOTES

1. This section draws heavily upon Glover 1984; Goldsmith 1985; and Minot 1986. In addition, reference was made to several World Bank Reports, including 1986.

2. In each instance several alternatives may or may not be simultaneously feasible. Plantation production persists in rubber, palm-oil, banana, and pineapple production even when outgrower production is a technical option. Some crops, such as pyrethrum, never appear to be grown on a large scale. Another example is French beans. Problems at harvest (production may continue over a period of time, or mechanical methods may destroy the plant) may explain why some crops must be managed under labor-intensive conditions.

3. Buyers discriminate among farmer offerings on essentially subjective grounds; a practice permitted by the virtual absence of any agreed standards in most developing countries. Farmers often make the claim that "grade" changes depend upon how much of a product the buyer wants. This is a serious matter when the contract has specified that the buyer will take all offerings that meet certain standards at an agreed price. From the buyer's point of view, farmers take advantage of the contract by offering produce grown outside of the contract when market prices have fallen below the contract's guaranteed price.

4. There are exceptions to this pattern, including tea and coffee.

5. Taken as a whole, contract commodities are ones whose price/quantity relationship is relatively inelastic over the relevant range. Because many commodities are processed, producers and middlemen face demand curves that become progressively less elastic as they become more remote from the final consumer. Tree crops, for example, are very supply inelastic as well. Contract commodities, as noted above, are relatively income elastic. Consequently, as incomes rise, price is relatively inefficient--and certainly slow--in supplying the appropriate signals to producers and investors. The situation is made worse when price signals are filtered through foreign-exchange rates (Minot 1986).

6. It is important to recall that the case studies for this research project were selected to include a wide variety of commonly contracted commodities. The very substantial government presence, although not statistically drawn, is significant, and represents the very important role played by government, especially in African countries, as the public sector attempts to take a leading role in promoting economic growth. The literature on contract farming in Latin America and Asia suggests a far less

central role of national governments in such schemes.

7. The development of the horticultural-export sector in Kenya has featured several examples of contract-farming initiatives taken by private companies (Jaffee, Volume II).

8. Usually the processing plants have high fixed costs, and management has an interest in keeping raw-material inflows at a steady level, close to plant capacity. Processors cannot rely upon open-market purchases to accomplish this.

9. Jaffee (Volume II) may provide an exception in the case of the French company seeking alternative bean supplies. It had first developed a source in Morocco. Its motives for going to Kenya included a desire to expand overall supplies of "extra-fine" beans to the French market and an attempt to hedge against the increasing demands being placed against the firm by its Moroccan partner. Such demands related to price and investments in unrelated projects.

10. In the United States, 80 percent of all contracts had the buyer provide inputs, 90 percent involved some monitoring of production, and 56 percent included two or more practices that the producer had to follow. Prices were almost always set according to a formula (Harris and Massey 1968).

11. Several of the working papers produced under the contract-farming study provide written examples of farmer-buyer contracts (e.g. Daddieh and Billings, Volume II).

12. The reasons why agribusiness firms enter into contracting schemes are discussed in much greater detail in Chapter IV.

13. Jaffee (1986) presents the case of passion fruit in Kenya. When grown on large farms, outbreaks of crop diseases repeatedly destroyed the crop. It was decided that production of the crop for subsequent processing needed to be dispersed among large numbers of smallholders in order to prevent the spread of disease. Planting material and technical assistance were provided in a joint public-private venture.

14. Jaffee (Volume II) gives an example where the company had to terminate the operation because it was unable to win producers' loyalty. Recent attempts to contract passion fruit for processing in Kenya have also run into difficulties of "leakage" into the fresh market. A Kenyan sugar scheme faced a continuous problem of receiving non-project sugar. Political pressures forced the firm to continue its purchases (Scott 1982). The experience of the tomato project in Nigeria is probably typical. When prices rise above the contract level, the firm gets little; when it falls below, it is swamped (DAI 1975).

15. A good example is the British company Tate & Lyle, formerly a major sugar producer. The company now takes management contracts for the processing and marketing of sugar (Dew 1978). Such a company can offer many skills otherwise unavailable to a government--specialized knowledge regarding international markets is an important example.

16. It would be interesting to examine the comparative rates of change between foreign-owned production-processing systems and locally owned ones. In the Philippines, national owners show no interest in changing to smallholder or outgrower systems, although land reform in central Luzon had this model in mind. The process of decentralization away from plantations seems to be most advanced in East Africa under pressure from national governments.

CHAPTER IV

LAND, LABOR, AND FARMER INCOMES: LOCAL IMPACTS OF CONTRACT FARMING

1. Introduction

This chapter seeks to address some of the local-level questions pertaining to contract farming. Local concerns are distinguished by three principal foci, which are analytically distinct but are in practice intertwined. The first pertains to the household as a unit of production and specifically to intrahousehold dynamics. The critical issues here are access to and control over property and labor, and, by extension, the pattern of intrahousehold benefits, costs, and risks under production contracting. Major themes are the feminization of labor, the exclusion of some household members from customary property (land) and crop rights, and possible changes in the power relations and social structure of farming households. The second focus is interhousehold, particularly the impact of contracting on income generation and differentiation. In a narrow sense this examines the social basis of recruitment of growers and the profitability of contracting, but in a larger sense it seeks to examine patterns of stratification within peasant grower communities. Landholding, patterns of accumulation, and use of investable surpluses are central to this discussion. The third focus, and the most difficult to document, deals with impacts at the community level, implying two broad sorts of concerns. The first is an assessment of contracting on community welfare and of the social implications of production contracting. The second is really historical, trying to trace how growers' fortunes may be shaped by the biography or trajectory of the contracting schemes through time. One of the major findings of some of the case studies is that contracting schemes are both fragile and volatile through time, and this volatility is transmitted to growers and the local community through periodic depressions, crises, and downturns in the local economy.

These different foci or levels are difficult to isolate in the real world, and some of the discussions that follow move across the boundaries of household, gender, or class to convey the sense of complex local configurations of change. In addition, it is analytically difficult to separate changes initiated by or attributable to contracting as distinct from other economic and social forces preceding contractual relations. This is a criticism leveled at Buch-Hansen and Marcussen's empirical work

in Kenya (1982) (see Heald and Hay 1985) and has been made forcefully by Okoth-Ogendo (1984) in pointing out that the impact of the Mumias nucleus scheme on land tenure cannot be analytically distinguished from the state-initiated registration and tenurial reforms coeval with contracted sugar production.

2. Farmer Income and Differentiation

The great variety of contracting schemes renders any simple generalizations about income and equity tremendously difficult. Nonetheless, it is clear that many growers have economically benefited from contracting in some schemes. The case studies of contract farming schemes revealed that net farmer incomes are generally increased through participation in contracting schemes. Improvements in net income varied from slight improvements of 10 to 15 percent to the doubling of farm incomes in less than five years (see Carney, Volume II). The highest incomes are recorded among French-bean growers in central Kenya, who are producing for lucrative European markets under arrangement with the Kenya Horticultural Export (KHE) Company (see Figure 4.1). The contracting of oil palm in Ivory Coast was an exception, but in this case lucrative, noncontracted crops (e.g., coffee and cocoa) were alternatives for farmers in the study region; comparisons of net incomes among contracted and noncontracted farmers in the Ivorian case showed the latter to have higher incomes.

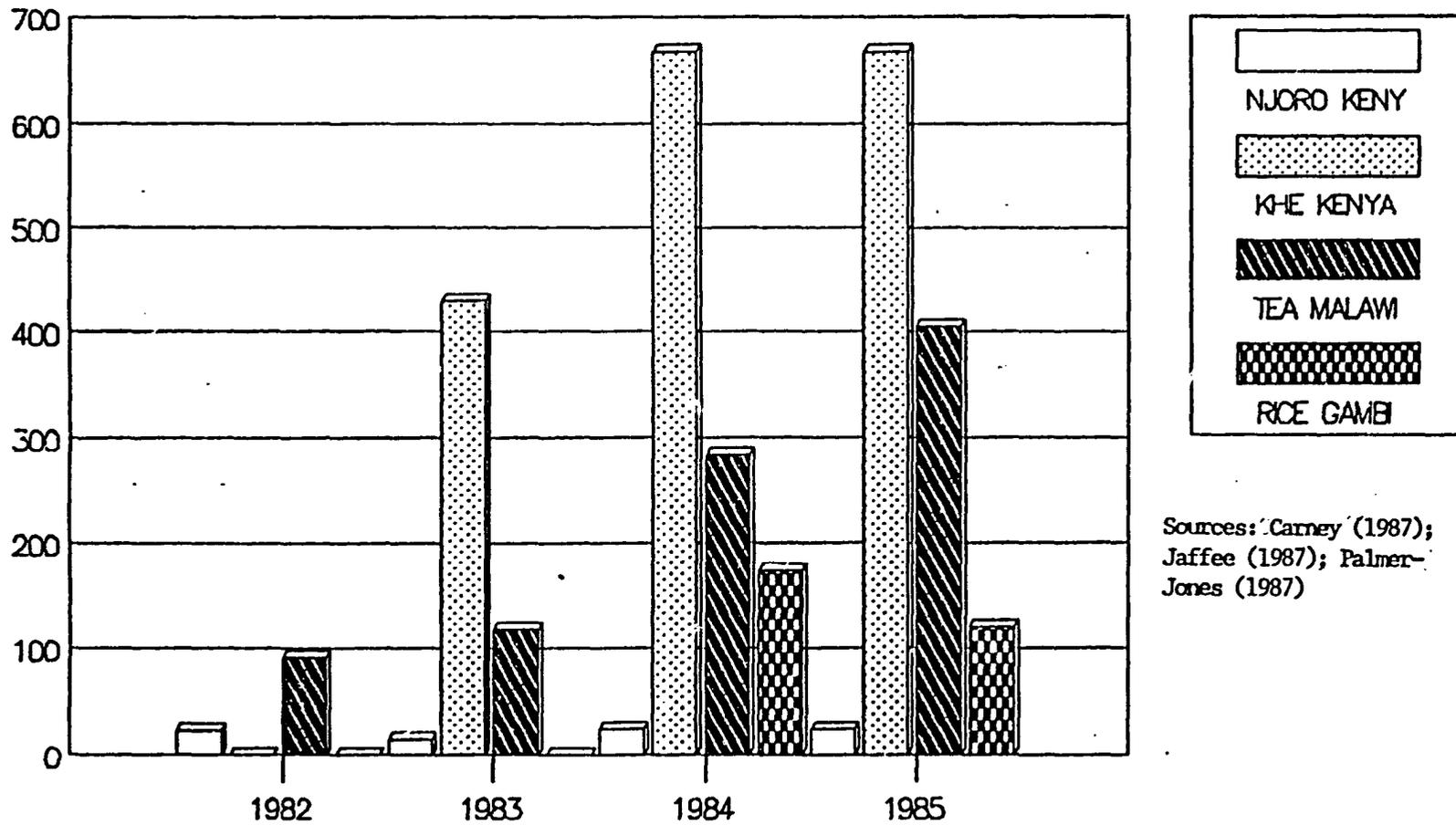
Even on the same project, profits and yields tend to vary widely among growers of one crop. Shipton (1986) shows how this is a reflection of a complex grading/quality system for tobacco. Growers with sufficient labor and capital to meet the taxing instructions and production routines (and with access to better soils) tend to produce higher grades and higher yields. Carney (Volume II) notes a similar segmentation among rice growers, where yields may be so low as to threaten debt repayment among some producers who have problems hiring labor. The ability to hire labor of sufficient quality and quantity is important in terms of productivity and yield.

However, the profitability (for growers) of most contracting schemes is not in question.¹ Since many of the schemes expanded rapidly--see Jaffee's case studies in Volume II--and there are frequently large numbers of farmers wishing to enroll, it would appear that the schemes have injected money into their local economies. Shipton (1986) estimates that tobacco in Luo regions gave higher profits per unit of land than any other crop, about 2.8 and 4.6 times as much profit as maize and cotton respectively. Carney (Volume II) estimates that average yields on the Jahaly scheme produced a doubling of cash income. But again, the question of average profitability is not as important as the structure of incentives for each grower in relation to capital, land, and labor resources. This is reflected in the

FIGURE 4.1

AVERAGE INCOME PER FARMER FROM FOUR CONTRACT FARMING SCHEMES

59
AMOUNT (\$US)



Sources: Carney (1987);
Jaffee (1987); Palmer-
Jones (1987)

wide variation in yields and the fact that productivity, while generally improved on the large contracting schemes, has, on average, failed to meet the management projections (see Palmer-Jones 1987; Daddieh, Volume II).

2.1 Grower differentiation

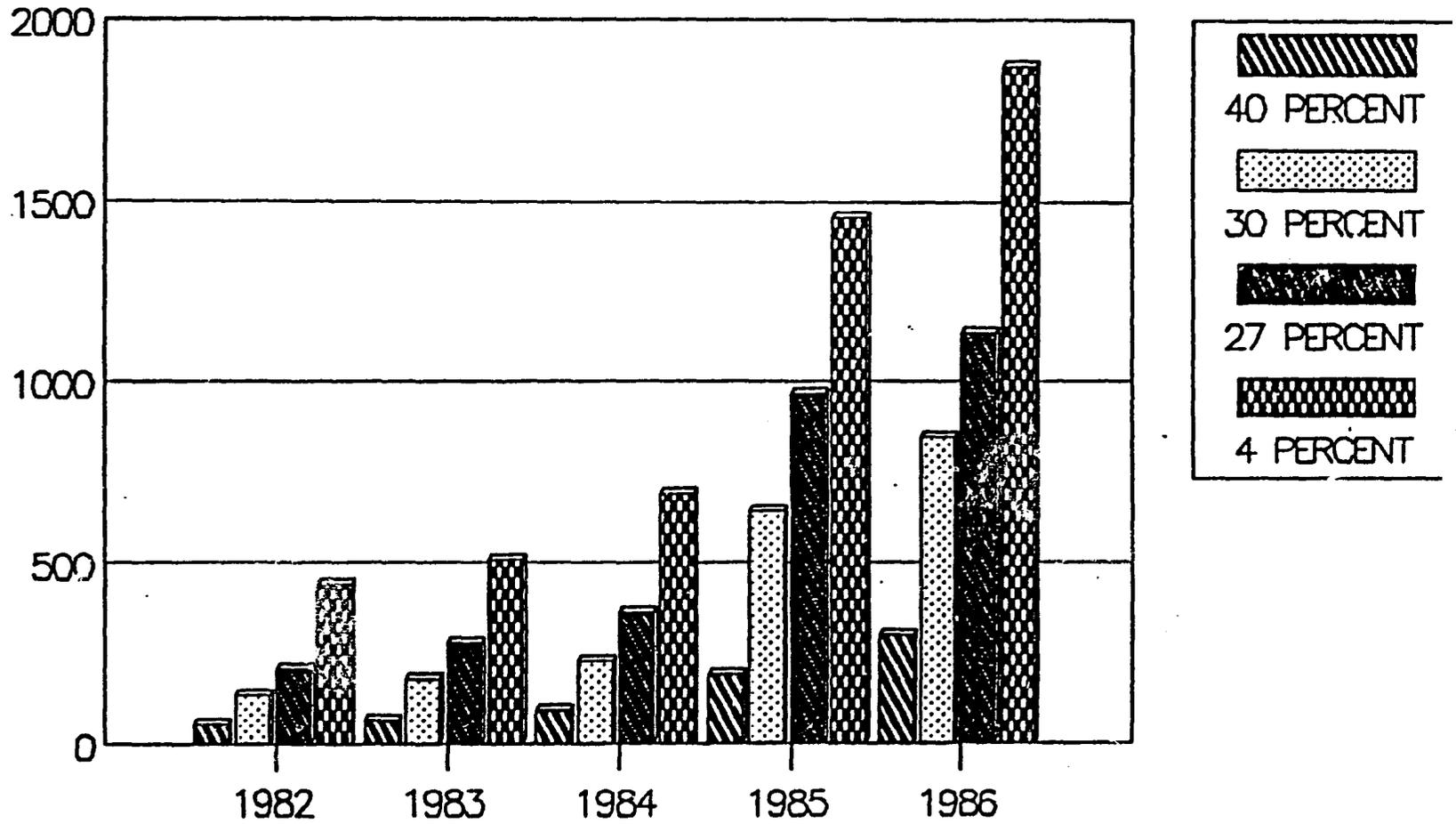
Incomes generated from contract-farming schemes have not always been equitably distributed at either the inter- or intra-household level. The most serious equity problems were associated with the contracting of perennial tree crops, which require significant input costs. For example, in the case of the Smallholder Tea Authority Scheme, 10 percent of tea growers reaped 41 percent of total income; the bottom 25 percent of growers attained only 3.5 percent of total revenue. During the period from 1982 to 1986, the gap between the incomes of the richest group of tea farmers (the top 4 percent of growers) and the poorest (the bottom 40 percent of growers) increased from \$249 to \$1435 (see Figure 4.2). In Ivory Coast, data on land ownership among contracted oil-palm farmers reveal that benefits have gone mainly to larger growers. Among a sample of 52 palm-oil growers in Ivory Coast, 10 percent of the growers owned more than 40 percent of the total farm land. In an area where the average landholding for contracted palm-oil growers is 4.4 hectares, our study found that the richest 10 percent of growers had an average farm size of 16.4 hectares. In addition, "most of the benefits have accrued to larger and more profitable plantations whose proprietors tend to be urban- or semi-urban-based weekend farmers rather than local peasants" (Daddieh 1987:45).

There are two immediate ways in which differentiation is important in contracting. The first is that the social basis of recruitment may exclude a large number of land- (or labor-) poor households through minimum-hectarage requirements. Heald (1986) suggests that this is the case of BAT in Kenya. Likewise, tenants on the Cameroonian projects (SODECAO, SEMRY) are often seen to be privileged farmers, and hence constitute a sort of rural aristocracy (Tchala-Abina 1982). The second is the internal differentiation among growers. In some schemes the growers are distinctively differentiated by landholding. The Miwani sugar mill in Kenya, for example, has 81 large growers (20 ha or more) and 160 small-scale (1.5 ha average) contracted outgrowers. Other schemes with a less bimodal strategy may nonetheless find a marked degree of inequality among growers. The Buret tea study shows that more than one-third of the growers held between 0.2 and 0.4 ha, but the average holding was 0.55 ha. Twenty-five percent of the growers averaged less than 1000 Ksh income per year from tea whereas the "best" five percent of growers accounted for 22 percent of total tea income (Buch-Hansen 1980a).

INCOME DISTRIBUTION AMONG GROUPS OF TEA FARMERS, MALAWI

69

AMOUNT (\$US)



Source: Palmer-Jones (1987)

To the extent that most contract farmers are differentiated, it is important to grasp both the basis for the differentiation and the tendencies toward relative income inequality. A fundamental starting point in such analyses is the recognition that off-farm income is a central part of some accumulation strategies. Hence in the Muhroni sugar scheme, 15 percent of absentee farmers (many of whom contracted larger acreages) were diversified investors for whom sugar was simply one income-earning enterprise. In virtually all of the cases studied, the largest growers straddled agricultural and off-farm sectors; many of the large sugar growers held positions as teachers or local government officers in the Nyanza sugar belt and on the northern Nigerian irrigation schemes. In these cases, it is clear that inequality preceded the projects and, while they may have facilitated further accumulation, only rarely did they generate such marked class differences.

The conventional ways to distinguish growers are through their use of hired labor, and the extent to which surpluses are reinvested in productive activity. Accordingly, Buch-Hansen and Marcussen (1982) identify three broad strata in Kenya. First, a small group of 10-15 percent of growers systematically hire labor and invest in land. In the sugar schemes many of these growers are absentee. The Kenyan "rural bourgeoisie" is parallel to the palm-oil planter class in Ivory Coast (described above), 17 percent of whom are absentee and who, as well-placed individuals with political connections, may own 100 ha or more. In addition, there is a village-based planter class who hire on average two permanent laborers. A second, middle stratum, constituting a majority of growers, employ family and wage labor and spend income on consumer goods. It has been argued that this middle peasantry is often the focal point of the large outgrower schemes (TAT in Tanzania, for example). And third, a rural poor relying largely on family labor, are often marginal agricultural producers and perhaps semi-proletarianized.

Most contract projects embody these differentiated grower characteristics, but important empirical questions are involved in the dynamics within this tripartite model (i.e. are the rich getting richer?) and the significance and size of each strata in relation to the functioning of the scheme. The Kenyan analysis by Buch-Hansen (1980) suggests an emerging rural elite and a stable middle peasantry. But it is unclear how this nascent rural capitalist class is using agriculture (specifically sugar and tea) as a base for accumulation. Indeed, Mulaa (1980) argues that there are few opportunities for investment in cash crops outside of sugar, and the Mumias and other schemes are actually regulating, via the contract, the acreage under cane (preferring smaller growers). In this sense reinvestment in agriculture to enhance productivity and commercialized output may not be occurring. Profit from sugar may be channelled out of agriculture into commerce or finance. This may also mitigate

against land accumulation as a basis for resource accumulation, although there is clearly a process of land acquisition in progress. Heald (1986) makes a similar argument for tobacco; a process of accumulation is occurring in which the rich accumulate resources and the poor are dispossessed or forced to relocate, but this "will not lead to the establishment of large estates" (1986:14). Rather the goal is to provide enough for the next generation and to "maintain essentially traditional lifestyles." One should be very careful about generalizing such experiences, since in some cases land accumulation is proceeding apace, but the questions about the relationship between surpluses generated in contracting and patterns of investment are critical.

There is also a segment of growers who are land- and labor-poor and their connection to the projects is often tenuous at best. Carney (Volume II) shows how 25 percent of rice growers are marginal to, or fall below, the critical yields required to ensure loan repayment. Palmer-Jones (1987) examination of the low yields among labor-poor families also suggests that they face extreme conditions. Whether such rural poor are evicted, lose access to project resources, or are dispossessed is a complex issue. In some cases, debts are written off and eviction is not within the realm of political possibility. The middle peasantry class may in some respects turn out to be the backbone of many contracting schemes. While profitability is largely determined by price, these households continue to produce commodities on the basis of family labor that is not paid, with the result that they may produce under conditions that larger farmers would not find profitable. Jaffee's case of French beans (see Volume II) suggests that in Vihiga, larger growers who are dependent on hired labor may not find production "economically interesting."

The distributional effects of contract farming of horticultural crops tend to be more favorable than other commodities. Our analysis of contracting schemes in the horticultural sector of Senegal reveal some skewness of benefits among producers, but this was not significantly different than among neighboring, noncontracted farmers. In the case of the Njoro cannery scheme in Kenya, we found positive effects of vegetable contracting on women's incomes, which generally are considerably lower than the incomes of male farmers. Unlike other commodities examined in the study (sugar, tea, palm oil, rice, and poultry), vegetable production lends itself to small-scale units. The research in Senegal found that the labor intensity of horticultural production and the lack of labor-reducing technologies keeps the scale of production within the means of most small farmers, with the exception of the very poor in the area.

Our analysis of the Njoro vegetable-canning scheme also shows that contract farming can reach large pockets of small farmers. In western Kenya, approximately 15,000 smallholders are

growing beans on 1/20 acre plots for an agroprocessing firm. Participants are mainly low-income farmers, approximately 70 percent of them female. While the income generated from their small plots does not fully meet their cash needs, it does supplement household income and can be integrated into their existing farming systems with little disruption of food production.

2.2 Income differences between male and female farmers

In enhancing women's incomes, the Njoro example from Kenya proved to be an exception for contract-farming schemes. Increases in net farm incomes that have taken place as a result of contract-farming schemes have mainly accrued to male farmers and, in some cases, the schemes have actually reduced women's income and welfare levels. In the Jahaly Pacharr Scheme in The Gambia, the project design did not recognize women's prior land rights and allowed scheme tenancies to be monopolized by male farmers. Consequently, women have turned to wage labor as their only means of earning income, and have forced even their own families to hire them to work on scheme plots. Although to a lesser extent, female marginalization has occurred on oil-palm contracting schemes in Ghana. One of our case studies of oil-palm contracting, a joint Government of Ghana/Unilever Africa enterprise, shows that women's rights in land were undermined, while their labor load was significantly increased with only marginal economic returns.

Another scheme where we were able to find income data distinguishing male and female farmers, the Kibirigwe Irrigation scheme, also revealed inequities. This scheme grows vegetables on contract for wholesale grocers in Nairobi and, in many respects, is one of the more successful contracting schemes (see Chapter V). Farm-income data show that 75 percent of female farmers (i.e., female-headed households) earn less than 10,000 Kenya Shillings (\$ 625) per year, while 58 percent of male farmers earn more than 10,000 Kenya Shillings per year (Makanda 1984:127).

The negative effects on female farmers resulting from contracting schemes are not significantly different from those that have occurred on other commercial schemes. These include: (1) failure to recognize women's claims to land; (2) failure to acknowledge that women's work loads may increase, but improved revenues may go to male farmers; and (3) establishment of extension and input-delivery systems that are biased in favor of male farmers. These potential biases should be addressed and corrected in the design of contracting schemes, especially since most contracted commodities are labor intensive.

3. Labor Organization and Reorganization

A central aspect of production contracting is the labor intensity of most contracted crops. These labor demands (either in terms of quantity or quality) raise the possibility of labor shirking under the wage relationship, and contracting, particularly if it operates as a piece-rate system, is often proposed as a partial solution to the cost-monitoring problem of plantation (wage-based) systems (Datta et al. 1986). If contracting of smallholders is a way in which the buyer/processor can tap the peasant labor market in the absence of a well-developed market in labor (Lehmann 1986), then the question of labor mobilization and potential conflicts (by age or gender) become practically and, as we shall see, politically important. Indeed, in many contracting schemes, labor shortages and labor bottlenecks become points of conflict within households and between management and growers. Especially in schemes such as Vuvulane (Swaziland), which cultivates a labor-intensive crop (sugar), and is combined with a very tightly controlled and regimented crop production cycle (the SEMRY irrigated-rice project is another example), labor allocation and mobilization become major terrains for struggle. These cultural aspects of production and economic change are often ignored in favor of narrow discussions of profitability or differentiation (Heald and Hay 1985). Equally, the conflicts and changes generated at the local, household level may, and often do, spill over into the public domain of grower-management relations, specifically control and subordination of labor within contracting schemes to meet the rigid production routines. These issues are addressed in this chapter.

3.1. Labor mobilization

The specific labor demands made via contracting will vary according to the technical specifications associated with each crop. There are three labor issues, however, that require emphasis. The first is quantitative, pertaining to labor demand by crop. All contracting makes quantitatively new labor demands. In the case of sugar this is seasonally associated with harvest (every 12-14 months) and mass movement of cane. Tobacco is especially labor-intensive in virtually all phases of the crop cycle and demands, in addition, the heavy labor investments associated with the construction of a curing barn and the arduous task of preparing wood for curing. For example, a half-hectare plot in Nyanza (Kenya) absorbs between 2.8 and 4.6 times the labor of a similar-sized plot of hybrid maize.² The sense of hard work is widespread: according to Shipton (1986:295), the Luo feel that those who grow tobacco for BAT have "never worked harder." The women tea growers in Tanzania refer to the loss of time and autonomy under contract and the slave-like nature of work obligations on their tea estates the "big slavery," as Mblinyi (1986) calls it.

The second issue concerns contracting schemes in which irrigation and double cropping are employed. In these cases, where work may be distributed across a dry season in which agricultural production (and hence customary work/labor obligations) was previously absent or limited, the problem of labor conflicts and bottlenecks is immediately evident. The Jahaly Pacharr irrigated-rice scheme shows this dramatically during the critical period between wet- and dry-season crops, a period that coincides with major household-labor mobilization for upland food and cash crops (millet, sorghum, and groundnuts). The opportunity costs of deferring either rice puddling (viz., conflicts with project management) or upland planting (viz., the deleterious consequences of late planting on yield) are thrown into relief.

The third case concerns timing and scheduling of operations and subsumes matters pertaining to what one might call the quality of labor. For example, the Vuvulane sugar scheme rests on the daily rateable system that regulates cane delivery to the factory (for efficient mill operation) and a highly routinized and regimented water-delivery system. Jahaly Pacharr also demands a well-scheduled mobilization of household labor for on-farm practices and water delivery. The regimentation of labor on some of the contract-farming schemes is of such intensity that the distinction between independent smallholder and agricultural wage laborer is blurred. On the largest Ghanaian oil-palm scheme, for example, the written contract between individual smallholder and the GOPDC explicitly outlines the following rules and cropping schedule:

- underbrushing is to begin in November/December
- heaping and burning are to be completed by 31 March
- all planting must be completed by 30 July
- interrow weeding is compulsory every 4 months, 3 times yearly
- circle weeding is obligatory every 4 months, 3 times yearly
- harvesting is to be conducted on designated dates
- fruits are to be transported to designated collection points on specified dates
- drains must be constructed and frequently maintained in plots that are likely to flood
- no cassava should be planted in plots

--no plantain should be planted in plots

The contract specifies that noncompliance with any of the above points gives the scheme the right either to perform the agricultural task and charge the smallholder, or reallocate the plot to another smallholder after reimbursing the farmer for completed work.

Labor is affected by quality concerns in the context of plucking standards for tea and the standardization of quality requirements across much of the fresh-fruit and vegetable sector. These aspects of contracting therefore imply temporal (work rhythms) and quality aspects of household-labor mobilization.

There are two recurrent themes in relation to labor that emerge from our case studies and the contract-farming literature. The first pertains to the context in which growers operate that might shape or limit their ability to mobilize labor, as illustrated by grower performance in the Malawi Smallholder Tea Authority (STA) (Palmer-Jones 1987). The second is the ongoing conflict in many of the centralized contracting schemes associated with management's attempt to subordinate growers, which is to discipline irregular labor supply. Many of the case studies show how management tends to see labor problems in such terms as peasant ignorance, poor farming practice, lack of experience or knowledge, or the cultural absence of notions of time. Other research points to the relationship between grower conditions (low incentives, limited cash availability, inefficient contractual terms) and low productivity/performance in many schemes (for example, yields in STA are only two-thirds of those expected), and smallholder incapacity to meet the scheme's production routines.

The specific forms of labor mobilization and allocation are met in large measure from domestic sources. It is impossible to generalize about the nature of households involved in contracting, but it is clear that African households generally must be seen less as solitary entities than as "the sites of separable, often competing, interests, rights, and responsibilities" (Guyer and Peters 1985:210). For the purposes of this report, the internal dynamics of farming households, predicated on a contradictory unity of property and labor, are shaped by overlapping claims on the labor of household members. For example, claims by a male household head on the labor of women, wives, or juniors may often be tied to land and other property rights. These bundles of rights (and the power relations that they imply) shape the manner in which labor claims are made and labor is mobilized. Peasant-labor supply must therefore be seen in terms of: (1) the Chayanovian demographic structure; (labor availability as expressed through a labor-

consumer ratio); (2) the structure of intrahousehold labor reciprocities (often segmented by age and gender); and (3) the ability to hire additional paid labor. The case studies reveal that the additional labor demands of contracting often create tensions and conflicts within the household (Carney, Volume II). In some cases, contracting may expand the patriarchal authority of the male household head and result in additional work burdens for women (who may be excluded from crop or property rights). In many cases, labor demands exceed domestic capacity and labor is hired in. (For example, 60 percent of Malawi's STA growers hired labor for farm operations [Palmer-Jones 1987].)

The general patterns exhibited in the case studies suggest the following:

- (1) Additional work burdens, which are distributed according to power relationships and property rights, develop within the household.
- (2) The feminization of labor occurs, as women often absorb increased workloads, either indirectly through the reorganization of household responsibilities, or directly as contract producers (tea growers in Malawi and vegetable growers in Kenya).
- (3) Households will attempt to garner further labor, either through exercising customary labor claims, perhaps through polygamy or labor contracting (e.g. the case of stranger farmers).
- (4) The additional claims on household labor, usually going hand-in-hand with new crops and land rights, may generate conflicts within the household. Conflicts are frequently gender-, conjugal-, or age-based, and may result in the withdrawal of labor by some household members (Carney, Volume II) or outright violence (Jones 1985; Heald 1986).
- (5) Labor-allocation conflicts arise between crops, most especially between subsistence crops and the contracted commodity. These conflicts reach crisis points during labor bottlenecks (such as planting and weeding).
- (6) Intrahousehold problems of labor mobilization may be experienced by management, who feel unable to discipline or subordinate peasants to work routines.
- (7) hired labor is usually necessary for most growers (regardless of status) to supplement household labor at critical points in the growing season (for example, tea plucking and harvesting sugar cane).

3.2. Labor bottlenecks, risk, and food production

Labor bottlenecks can be defined in both quantitative and qualitative terms. Richards (1983) defines such bottlenecks as those months in which labor requirements are greater than 10 percent of annual labor input. Using this metric, one can begin to see how contracting may generate complex scheduling problems. Bassett's work (1985, 1986) on contracted cotton production in Ivory Coast is exemplary in this regard, since he shows how a tightly specified work regime instituted by CFDT clashes with labor demands for food crops. There are four bottlenecks (see Figures 4.3-4.5) associated with field preparation, weeding/thinning, rice transplanting, and harvesting. In the Ivorian case, scheduling conflicts generated by cotton production under contract elicited several responses. The first (agricultural practice) included labor-saving techniques, especially animal traction, changing cropping patterns (the abandonment of labor-intensive crops such as yams), and crop neglect. The second (labor mobilization) involved the greater use of reciprocal labor groups and an intensification of household labor. The latter was markedly engendered: women's contribution to agriculture increased 57 percent over twenty years (almost double the increase of men over the same period), and women accounted for 90 percent of the daily wage-labor force, three-quarters of which was devoted to cotton.

Similar patterns are seen in the Jahaly Pacharr irrigation scheme. The introduction of dry-season cropping of rice--a labor-intensive work regime (see Figure 4.3)--generated direct conflicts with the critical June-July upland planting. Rice production under full water-controlled conditions requires an average of 60 percent more labor per land unit than traditional rice production. These new rice demands were met in part with hired labor--25 percent of all irrigated-rice labor is hired--and partly by expanded domestic sources. Not only have women's work burdens increased (Carney, Volume II), but men have also increasingly substituted their labor time from upland fields to wet-season rice.³ Male marginal labor productivity is, however, low in the rice sector in comparison to upland crops. Farmers participating in the scheme are under pressure to conform to the project work routines, which are geared more to yield maximization than to equating marginal returns with marginal opportunity costs of labor. The opportunity cost of pulling labor away from upland crops is substantial; for every ton of rice produced incrementally under contract, 390 kg of cereals and 400 kg of groundnuts are lost (von Braun and Kohm 1987). From a farmer's perspective, it would be better to spend more time in upland crops that give higher marginal returns to labor. Some farmers expressed this sentiment by refusing to follow the schedules set by the project management.

Figure 4.3

WORK PATTERNS BY CROP COMPLEX

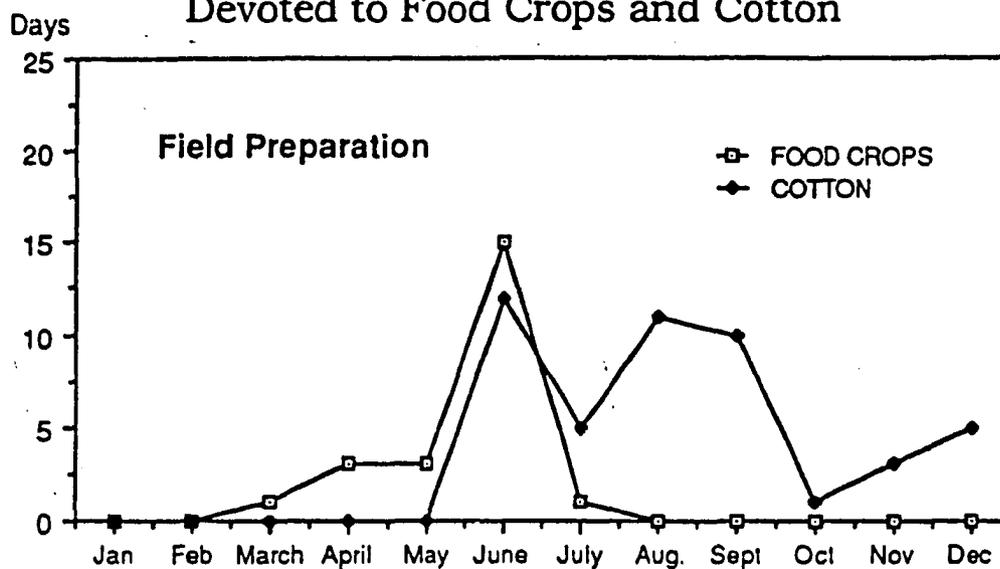
CROP	Month	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	LABOR (days per hectare)
	Main rainfall Dry Season ← Wet Season → Dry Season Fresh water tidal floods ←————→													
GROUNDNUTS MILLET	Clearing			■	■									107.6
	Ploughing				■	■								
	Sowing				■	■								
	Weeding				■	■								
	Harvest, drying								■	■				
	Threshing									■	■			
	Trading										■	■		
SWAMP RICE	Tilling, hoeing		■	■										232.0*
	Broadcast early rice			■	■									
	Sowing nursery beds			■	■									
	Working the swamps					■	■							
	Transplanting						■	■						
	Harvest of early rice								■	■				
	Harvest of transplanted rice										■	■		
IRRIGATED RICE (Jahaly-Facharr Schedule)	Irrigation			■							■			Total 650
	Weeding				■	■					■			
	Puddling					■	■					■		
	Transplanting						■	■				■		
	Dressing						■	■				■		
	Harvest		■	■									■	
	Threshing		■	■						■	■			
	Ploughing			■							■			
														Wet
														Dry
													240	
													410	

*Transplanted swamp rice without tractor ploughing

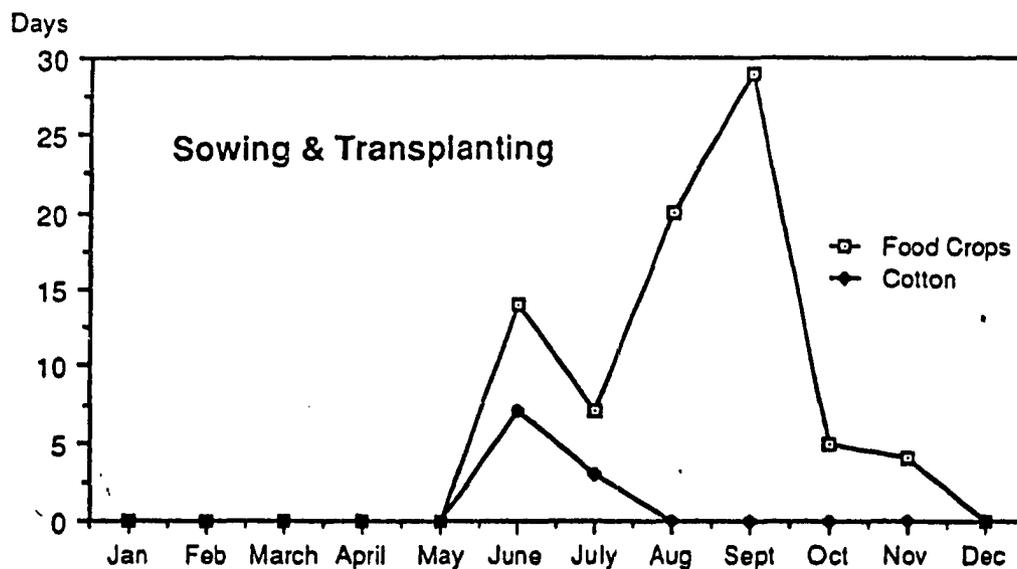
Source: Watts (Personal field notes)

Figure 4.4

Workdays per Household Devoted to Food Crops and Cotton

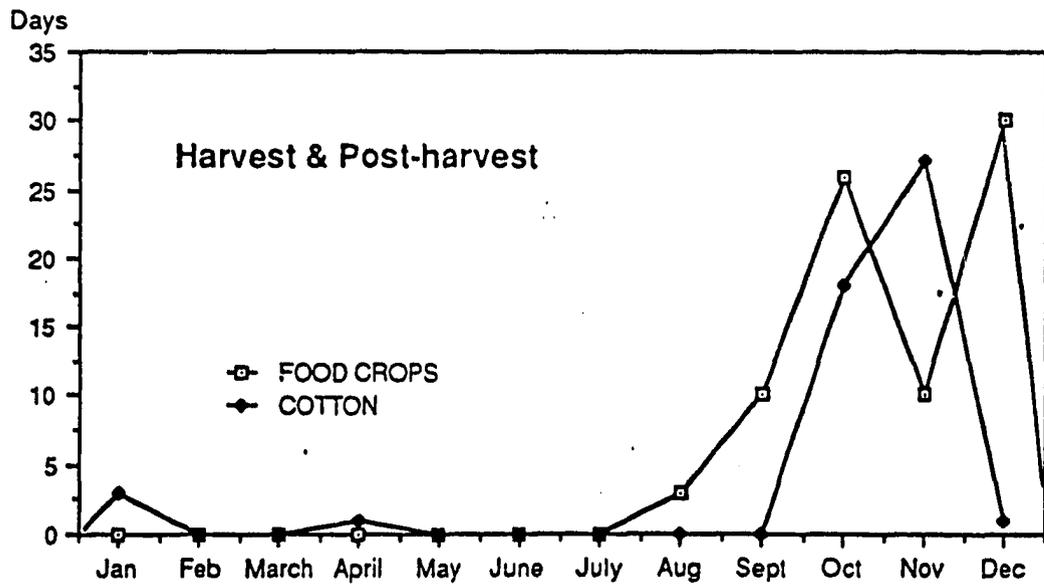
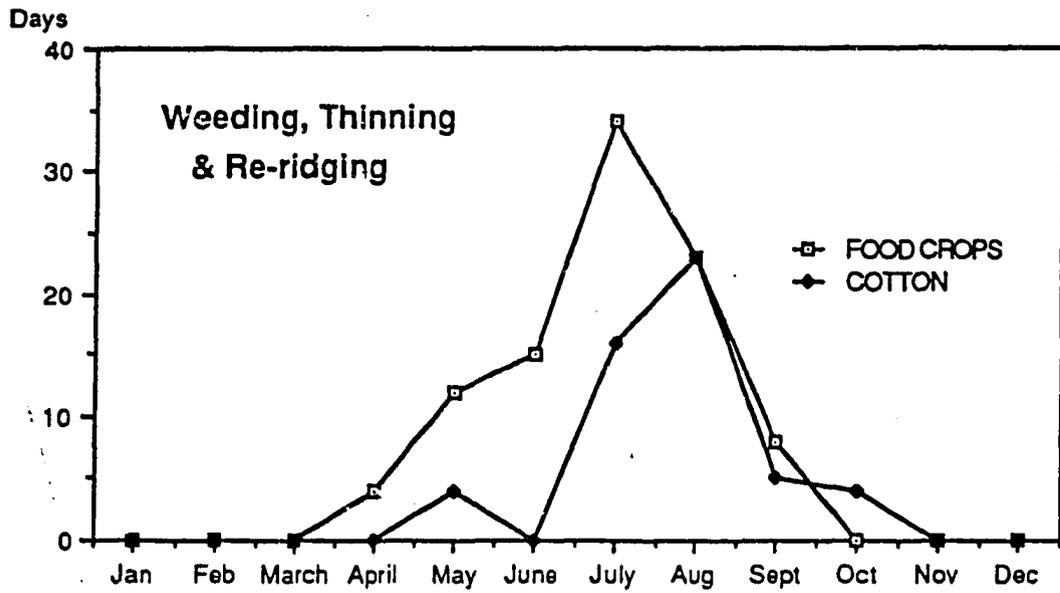


Source: Field Data, 1981



Source: Bassett (1986)

Figure 4.5



Source: Bassett (1986)

4. Household Dynamics and Gender

Berry (1984) has suggested that household studies should be less concerned with questions of boundaries (that are fluid and porous) and definition, and more concerned with the processes by which membership in a household confers certain rights over resources and certain powers. Households, regardless of social structure, are sites of competing interests and obligations. The pressures to perform work tasks on contracting schemes and the consequences of expanded commercialization associated with crop production have often had important implications for household structure. The SEMRY and Jahaly Pacharr rice projects show how women's roles and access to resources can change dramatically. Carney (Volume II) documents how the appropriation of land for double cropping involved an effective loss of land rights by women. Even though plots were eventually registered in women's names, the fields were designated as "collective" or "communal," meaning that crop rights were not individualized, and household heads could make claims on household labor for rice production. In practice, part of the rice is appropriated individually by senior men. In effect, women have lost certain land and crop rights, and the household has undergone a sort of centralization under the male head. Carney shows how women have fought this centralization through labor withdrawal and a refusal to fulfill some customary obligations between husbands and wives.⁴ The conflicts so generated--most especially in land-poor households--have jeopardized the cultural ideals of Mandinka familyhood. In some cases, however, women have effectively restructured the customary social organization of production, either by bargaining for a portion of the rice harvest or by withdrawing labor and selling their labor power within or outside of the household.

Jones (1983) documents a similar case from the SEMRY scheme in Cameroon in analyzing the conflicts between male and female incomes. Men participated in the new rice scheme, exercising control over land and employing female labor. Married women could not contest the claims by their husbands but did contest the nature of the exchange. Rice cultivation conflicted with sorghum production on their individual fields, and consequently, labor devoted to rice implied a potentially high opportunity cost. Jones discovered that women were not necessarily well compensated by their husbands for working on rice fields. However, since women were the major source of paid labor on rice fields, they used their bargaining power by spending more time in wage work than on their husbands' rice plots.⁵ Jones demonstrates how intrahousehold (and specifically conjugal) bargaining is actually an important consequence of contracting. However, it is not simply the rate of compensation--indeed, the notion of adequate compensation is a qualitatively new concept in Vele society--but also the type and meaning of the contract that is being negotiated. Contract production has, in effect,

internalized another contract within the household. Women bargain over their rights to be paid in relation to labor input, and hence are challenging the husband's right to dispose of the product of his wife's labor (a right that was recognized previously by the transfer of bridewealth cattle).

The British American Tobacco (BAT) program in Western Kenya shows how gender questions (exclusion and marginalization of women) move hand-in-hand with intrahousehold age contradictions. Tobacco money is going first to men; 96 percent of registered growers in Shipton's (1986) sample were male and controlled most aspects of the crop cycle (with the exception of "duller tasks," such as weeding, in which women are becoming central). Indeed, BAT defines the official criteria for production in terms of domestic labor availability, which increasingly means wives. According to Shipton's Luo study, the centralization of tobacco receipts has "changed the balance of household resources" (1985:301). Women benefit only indirectly (as producers of grain alcohol or, for example, by the increased availability of metal roofs to ease water collection). But there are additional changes based on age. BAT prefers to recruit younger or middle-aged farmers because of the labor intensity of tobacco, and hence, junior status has been conferred with expanded economic power. Shipton again refers to age-based intrahousehold conflicts resulting from newfound wealth and the fragmentary or divisive tendencies seen in intergenerational households as sons gain economic autonomy.

A focus on household dynamics suggests not only that domestic structures may be realigned by contracting, but also that household structure shapes the responses to contracting. This duality--what Giddens (1985) refers to as structuration--is noted in the research by Heald (1986) in Kenya, which examines the adoption of tobacco in several ethnic communities, each with its own different domestic structure. After 1975, tobacco became a profitable, if labor-intensive crop--BAT estimated that a good farmer will devote 108 days to tobacco--but Heald's work suggests that the impact on crop mixes and on subsistence depended crucially on the ability of the household head to muster and reallocate labor. The size and authority of households vary among the Teso, Kuria, and Bukusu, for example; with contradictory results for tobacco and domestic social structure. Among smaller Teso households, tobacco production exacerbated domestic patterns of allocation and control; interests that centered on wives ran contrary to interests that centered on husbands (see also Carney, Volume II). Tobacco, requiring the labor of all wives, effectively centralized male authority in a way that threatened the conjugal contract and fueled domestic conflict. Tobacco must be especially profitable to compensate for these structural tensions. Among Bukusu families, where husband and wife act as a joint production team, cash cropping had already induced a switch from millet to maize, and these

households were more tolerant of subsistence underproduction. Tobacco was seen as a strategy to provide subsistence and investment, and a woman's responsibility for feeding her family was not jeopardized by her laboring on tobacco fields at the expense of food production.

Tobacco vastly increased the demands on female labor in all of the Kenyan tobacco areas, but the effects of such demands varied. Households tend to be segmented or unitary, depending on the centralization of power in the household head. Adopting tobacco tends to promote a shift from segmental to more unitary forms. Given the abrogation of customary rights that it entails, this shift is likely to meet resistance. This suggests that the labor intensity of contracting and the focus on the household as a unit of production is likely to render the question of intrahousehold labor mobilization a fundamental, and often problematic, aspect of project performance. Whether the mobilization of labor can be met, and by what means, implies changes in the workload, in the sexual division of labor and, in many cases, in access to resources and income along lines of gender and age. Intrahousehold bargaining and occasional conflict are indicative of how contracting can convert the household into an arena of struggle over rights, obligations, and competing interests (Jarosz 1987). Age, patriarchal authority, and the strategic position of women are constitutive of these struggles and changes, which have direct consequences for the capacity of household production units to meet the work routines required by the contract itself; and for the economic feasibility of the schemes themselves. Regarding the latter, Carney (Volume II) demonstrates how the benefit/cost ratio for the Jahaly Pacharr scheme has become increasingly unfavorable; interhousehold tensions have amplified labor/monetary costs, with women willing to work on "family" rice plots only for wage compensation.

5. Land Tenure and Access to Resources

The enormous complexity of land-tenure systems in sub-Saharan Africa can only be grasped historically. In assessing precolonial land tenure as a precondition for understanding the changes that might in some way be attributable to contracting, it is generally assumed that:

1. Persons who cleared land, in the absence of prior or more powerful claims, possessed use rights;
2. In land-surplus areas, land rights were obtained through residence or membership in communities and groups, conventionally traced through real or fictive genealogical attachments. Land-use rights could often be inherited and were permanent;

3. The crucial preconditions for continued use rights were access to labor, and hence, continued production/use; and

4. Land was rarely sold, being under group rather than individual control, and systems of land use reflected complex, overlapping multiple rights (such as rights to graze or rights to trees).

These patterns of land tenure were frequently seen as customary, and colonial states often constructed their own views of what local land customs actually were and attempted to leave land use and the adjudication of rights in traditional hands (sometimes by nationalizing land and regulating external influences such as settlers). But in practice, outside of those settler areas in which the colonial state facilitated freehold, customary African land tenure was dynamic and changing. In any case, in many areas individual possession was of some antiquity. Furthermore, even where communal ownership was dominant, many rights remained with individuals, and "an increasing range of rights in land were appropriated by individual households" (Feder and Noronha 1987:163). Land sales, rentals, and mortgaging developed during and after the colonial period, even where such transactions were not legally recognized (Watts 1984).

The starting point for the study of land tenure is the recognition of how society handles rights--specifically the "bundle of rights" in land (rights to use, to plant trees, to rent, to sell, and so on). If rights signify the manner in which claims are made in certain jural contexts (Okoth-Ogendo 1986), then rights must necessarily be understood in terms of power and how it is allocated to members of society. This process of power allocation is embodied in the "social process of vesting" of land rights, and specifically how vesting confers access and/or control over land. In some cases the state attempts to regulate and centralize the process of vesting (usually seen as the promotion of individual title and state appropriation or nationalization of public lands), and in other cases the state oversees indigenous systems (a broad cover term for the complex local configurations of rights in land). African approaches to land tenure, therefore, can be classified into three broad types (Feder and Noronha 1987):

1. Countries that allow the acquisition of individual title (Kenya, Ivory Coast) with or without restriction;
2. Countries that recognize different tenure types: Swaziland, Ghana, and Botswana, for example, have individual title, indigenous systems, and public lands; and
3. Countries that vest title to land in the state: in

Nigeria and Ethiopia, for example, individuals theoretically only have rights of use and occupancy.

In this context, the question of the impact of contracting on land relations is difficult to assess for at least two reasons. First, other forces (prior to, or coeval with, contracting) simultaneously shape land rights. Second, some contracting schemes involve direct state intervention (often appropriating land on long-term lease), which in effect is a centralization of land rights. However, land use is then decentralized (i.e. reallocated) to tenants, many of whom operate on the basis of their prior understanding of customary tenure. Within the household, the centralization of control by the state may initiate complex changes in, and struggles over, land access and use. This seems commonplace in many contracting schemes where land has been appropriated in some fashion as a precondition for production.

5.1. Land rights and land control

A recurrent feature of many large nucleus-estate schemes is state control of land. The centralization of land rights that large-scale appropriation involves is often implemented by legislation such as the Nigerian Land Use Decree (1978) that established the juridical basis for land nationalization. In some cases, however, the attempt to centralize land rights on a large scale--for example, the acquisition of 20,000 acres by the Ghanaian government for the GOPDC oil-palm scheme--has been especially problematic. Peasants have resisted such claims or interpreted the notion of lease and/or tenancy on their own terms (Carney, Volume II). State or project control of land naturally confers great power in terms of regulating and disciplining growers, since it raises the reality of eviction if production routines are not met. In some cases it is not clear whether the contractors actually have the political capacity to evict.⁶ The SEMRY I and III projects in Cameroon are a notable exception. Land has been appropriated by the state and given in kind to the SEMRY Corporation. Plots can be withdrawn at any time from farmers who fail to comply with the contract. Tchala-Abina (1982) notes the "high suspension/expulsion rate" and large interannual variations in land availability (i.e. evictions) as the project attempts to regulate the problems of crop oversupply by farmers. The chance of a farmer receiving a plot of land for five consecutive years, as stipulated contractually, is very slight. SEMRY III is, like some of the World Bank contract schemes, a settlement project in which land is owned by the corporation, which confers direct control over settlers. In all of the SEMRY schemes, the possibility of farmer shareholding in the scheme is written into the project. However, this has not occurred, with the result that farmers are tenants with little autonomy who approximate the "disguised workers" of some Latin American outgrowers' enterprises.

A second land issue in the context of tenant-based contracting pertains to land acquisition. The Mumias scheme displaced 1,000 families and forcibly appropriated land. Barclay (1977) claims that 90 percent of displaced families used compensation to acquire other land, while Allen (1983) suggests that forcible sale and reports of undercompensation were "teething problems." It appears, however, that land remains a sensitive and politicized issue in Mumias. Indeed, Shipton (1986) notes that displaced farmers from the South Nyanza Sugar Company at Awendo (between 1978 and 1980) moved into Luo districts and acquired land as clients. Such land was ecologically marginal and use rights were ephemeral, with the consequence that Kenyan land registration has often dispossessed the displaced sugar growers. An especially dramatic case of large-scale dispossession and inadequate compensation occurred in the Bakalori scheme (Nigeria). Thirteen-thousand people were flooded out and compensation was massively inadequate, plagued by excessive corruption and gross undervaluation of land and trees (Beckman 1985a).

Land acquisition and centralization of rights of control also imply a reallocation of use or access rights and, in many contracting schemes, this has been especially difficult. Allocation began in 1976 at Bakalori, but farmers maintained that plot allocations were usually 40 percent smaller in size than land appropriated. The project management usually argued that greater productivity of the plots under full irrigation conditions compensated for any loss of production (three years during canal construction and leveling!) or reduced acreage. Farmers eventually refused to cooperate over land registration, and this sharpened the conflicts between growers and management.⁷ An even more byzantine land situation arose at Jahaly Pacharr, where the reallocation process was revoked, after only one season, on the grounds of irregularities and gender bias. In this case allocation was mediated through local district officers and chiefs, who were either state functionaries or members of settler lineages (Carney, Volume II). In both Bakalori and Jahaly, land was allocated to merchants, military personnel, and bureaucrats, in spite of their lack of prior claims on land.

A third concern relates to the impact of state centralization on household control and access to land, and, specifically, how changing access rights may exclude women. In the case of SEMRY, for example, land was allocated solely to men, and in the BAT projects virtually all recruits are younger men. (Women are excluded on the grounds of the labor intensity of tobacco, and access, or lack of access, to labor). The Jahaly Pacharr project reveals how land appropriation (on a thirty-year lease) and reallocation effectively neglected women's prior access to (indeed, individual ownership of) swamp land appropriated by the Gambian government. Women's loss of rights

on their personal fields (and a measure of personal autonomy as a consequence) turned out to be a complex issue because, after many land disputes, the project management set up new Land Allocation Committees in the second year, and most plots were registered in women's names. However, Carney (Volume II) documents how this state centralization initiated struggles over meaning (the meaning of customary land rights) within the household. Men claimed that, irrespective of registration, the plots were collective/household fields. This meant that husbands could claim their wives' labor and control the disposition of the product (a part of which was sold for personal use by the male head of household). Land disputes in this case spilled over into labor conflicts, since some women withdrew their labor and sold their labor power either to their husbands or as part of women's work groups.

The Kenyan cases also suggest that statutory law (land registration) that embraces the contracting areas has not eclipsed kin relations (Haugerud 1983). In a tea-growing area, MacKenzie (1986) shows how the attempt by kin-based groups to maintain control over land in the context of individual ownership has rendered women's statutory rights to land especially insecure. In the context of the profitability of contract production--for example, tea and tobacco since the early 1980s--control over land has become a primary domain of household politics, but MacKenzie shows that in Muranga at least "a wife's purchase of land is an explicit threat to the balance of power within the household, and a threat to male-defined territory at the wider mbari level" (1987:29). Shipton (1986) suggests similar processes in the case of tobacco in Luo districts. One of the most useful studies of tenure was conducted in the Nyanza sugar belt by Okoth-Ogendo (1984), who traces the consequences of the creation of block production units under contract. The schemes involve the appropriation and consolidation of land into blocks and their distribution into seven-acre plots. Okoth-Ogendo has shown that 20 percent of farmers were compelled to move and forced to acquire land elsewhere on reciprocal tenancies. The land registration has made such tenancies insecure and many Luo have subsequently been evicted; other long-term tenants have contested the eviction claims of the owners. Second, compensation was inequitable (most especially for the land-rich), but there have been pressures--reflected in the growth of land sales--for larger-scale (seven-acre plus) units of production. Third, the block system placed a high commercial premium on land. Although this did not lead to an active land market, "it may have made significant contributions to the large incidence of family disputes" (1984:181). And finally, the tenure situation of the settlers is insecure, in practice being simply a temporary occupation license.⁸ Okoth-Ogendo suggests that these terms are invariably misunderstood by growers and that they stand in contradiction to the reality of increasing individualization of use rights and control in the area. Palmer-Jones (1987) also

discovered that farmer insecurity over tenure on public lands in the STA scheme was a major obstacle in perennial crops such as tea, which require a long gestation period.

Berry (1986) has argued that centralization of land rights (for example, in state-run outgrower schemes) may be associated with individualization of other rights with respect to land. These state interventions may redefine access to land and provoke struggles over meaning and power, which may inhibit smallholder productivity or labor mobilization. These conflicts are endemic in many contracting schemes. The Vuvulane scheme, which benefited from a dual land policy conducive to large-scale appropriation, nonetheless confronted serious land questions; in particular, settlers and management struggled over differing rights with respect to inheritance on the death of a settler and compensation upon cancellation of a tenancy (Tuckett 1977).

5.2. Landholding, land markets, and land conflicts

There are three important aspects of landholding that pertain to grower landholdings as distinct from the larger question of grower differentiation (see Section 5).

1. Many contracting schemes contractually establish landholding thresholds for growers, often as a mechanism for preventing the erosion of domestic food production. In the case of schemes in which growers are tenants, land distribution can be, in theory, strictly regulated. Sugar-cane revenues from Mumias, for example, were comparable to other agro-complexes. The SEMRY rice project limits growers to one-hectare plots, and some of the settler sugar schemes in Kenya establish upper landholding limits (see also the Ghana oil-palm schemes). There are two caveats. This threshold notion is not incompatible with marked socioeconomic stratification; indeed, the work by Buch-Hansen and Marcussen (1982) shows how growers with similar contract holdings may be markedly differentiated. This may occur in several ways. Palmer-Jones (1987) documents cases of disguised multiple-plot tenancy or ownership in the case of STA (plots are registered with actual or fictive kin). In addition, some large growers employ contracting as a minor component of a diversified portfolio (off-farm income often being considerable). The large, absentee sugar growers in western Kenya are a case in point. Some of the smaller private vegetable concerns documented by Jaffee (Volume II) suggest small and quite uniform acreages devoted to beans (Njoro Cannery only provides seed for 170 sq meters per grower) and Asian vegetables (0.5-1.0 ha). It is unclear whether contractors as a group vary significantly from other peasants in the vicinity; Shipton (1986) argues that the Luo tobacco growers were not different in landholding from other non-tobacco smallholders.

2. A second approach is to contract specifically with large landholders on the grounds of start-up capital requirements, reliability, adherence to contract stipulations, or long-standing contractual relationships. Some of the vegetable growers in Senegal were large producers. Half of the sugar production for the Chemelil and Miwani factories in Kenya is provided by large-scale (mostly Asian) growers (the remainder is largely supplied from nucleus estates).

3. Some contracting schemes reflected a differentiated landholding distribution among producers. Some of the nucleus estates schemes have this dual structure between plantations and growers in practice, but other schemes, such as Vuvulane, explicitly targeted (indeed created) quite different socioeconomic and landholding constituencies. Vuvulane consisted of 68 holdings at eight acres each, five Swazi farms of 60 acres each for "advanced Swazis," and three 100-acre "non-racial farms." It is unclear in such cases whether this diversity is a risk-averse strategy by the management, a crude political attempt to ensure local support, or, whether as seems to be the case in some nucleus schemes, the smallholder component fulfills a largely rhetorical ("the state or capital supports the small farmer") function (Mabbs-Zeno 1986). The Bacita sugar scheme in Nigeria has markedly skewed landholding among its 40 growers: 20 percent of the growers account for at least two-thirds of the acreage (Oba 1983). The tea scheme in Kenya also revealed a stratified income source from tea; 25 percent of the growers in Buret accounted for 2.1 percent of the total tea income, while 5 percent of the growers account for one-quarter.

It is unclear what the long-term tendencies have been with regard to landholding. Some evidence is contradictory; Shipton (1986) suggests that tobacco is contributing to land accumulation and increasing land differentiation in western Kenya, but Heald (1986) suggests otherwise. Crop profitability and the attractiveness of tobacco in Kenya and tea in Malawi (due to the recent buoyancy of world prices) may contribute to land accumulation. In other cases, the land market is not well developed, in part because the contracts prevent subletting or sale. Of course, it may be that large farmers are accumulating land outside of the project, if the contract scheme is limiting the contracted acreage to large growers (and expanding the contracted plots to smaller growers). This appears to be the case in Mumias (Buch-Hansen 1980a). It is clear that land sales have been increasing in most areas--the market in plots in the northern Nigerian schemes have been especially brisk--and the value of land has risen dramatically. Barclay (1977) described many sales in Mumias, indicating that the price of land doubled from 1970 to 1975. In another sample, 19 percent of Mumias growers had bought caneland. Between 1975 and 1979 the price of canelands in Mumias had increased by an additional 200 percent.⁹

The price of land and the use of land for investment has converted the land issue on some schemes into an arena of outright conflict. As we have seen, questions of allocation and compensation are central, but another dimension is added when absentee farmers gain access to plots. This has occurred in the Bakalori and Kano schemes--so-called "overnight farmers"--in northern Nigeria. This invasion, attracted by the profitability of rice or wheat production through massive state subsidies, and despite the enormous technical inefficiencies of large-scale irrigated production (Beckman 1985), has exacerbated land conflicts. In the case of Bakalori, large-scale dissatisfaction with compensation and reallocation produced a head-on conflict with peasants, resulting in a mass slaughter of over 300 persons on the scheme (Beckman 1985a). These land conflicts and struggles have resulted in growers actually rejecting the management's cropping cycles and labor-scheduling routines, and the whole basis of the contract is in jeopardy as a result of the incapacity of the state to subordinate peasants. The political aspects of land are rarely raised in eviction cases on contracting schemes, except where the authority is especially authoritarian. Even in Mumias, it is reported that contract renewal is almost automatic (even among poor growers) for fear of unrest (Buch-Hansen 1980).

6. Grower Insecurity and Risk

In view of the enormous diversity of contracting schemes under review, it is extremely hazardous to make simple generalizations about grower risk. The relationships between commodities and risk certainly are not simple ones, even though some contracted crops, by virtue of their technical and agro-ecological requirements, might be subject to special cultivation problems in the humid tropics. But to take an example such as tobacco in two adjacent East African states (Kenya and Tanzania), grower-risk experiences have in some respects been quite different. In Kenya, Heald (1986) and Shipton (1986) emphasize the efficiency of local extension and input delivery, the quite bouyant prices, and the recent tendencies toward land accumulation (but apparently little--as yet--evidence of food decline). Mueller (1981) and Boesen and Mohele (1980) in Tanzania refer to increasing equality within the tobacco sector, major uncertainties (late delivery, malfeasance) in terms of local input provision, extremely low grower income (even during periods of favorable world prices), and local food insecurities (although tobacco growers, like tea growers in Malawi, attempted to divert tobacco inputs such as fertilizer onto maize farms). Commodity determinism is thus of little assistance in assessing risk and insecurity, which must be seen in the social and market context of the contracting labor process. What follows is an inventory of the recurrent risks (some of which have been

described or alluded to in previous sections) experienced by growers culled from the variety of schemes under examination.

6.1. Patriarchal, labor, and non-grower risk

A number of schemes highlight the ramifications of expanded demands on domestic labor for women (and children, although the record is very limited on this matter). In labor-intensive crops such as tobacco, women were recruited into new but demanding tasks. Similarly, the case of rice production in The Gambia suggests that women may simultaneously lose access to key land resources (that are the source of independent budgets within the family) and face new labor demands. In both cotton in Ivory Coast and rice in The Gambia, women increasingly seemed to be filling crucial functions in the local labor market. The risks experienced by women¹⁰--patriarchal risk as Cain (1980) calls it--were not only resource based (access and control over land), but included new labor burdens ("isn't this [tea] work like jail" as one Tanzanian grower put it, see Mblinyi 1986) and the possibilities of domestic violence (Karp 1987; Carney, Volume II).

Much evidence suggests that a great deal of the burden of contracting is displaced in two important ways. First, the growth of farm labor (seasonal or migrant) has created a class of rural poor who confront balkanized labor markets and deteriorating wages. Vletter (1985) refers to the appalling conditions of Swazi workers on the contract schemes. In addition, those who are excluded from contracting (for example, those who do not meet land requirements) may be especially vulnerable.

6.2. Debt

Insofar as the contractor provides critical production and extension inputs (water, seed, and fertilizers), contract production necessarily involves some form of credit. Many schemes effectively advance inputs that are valued and assessed at harvest and removed as a harvest share or as cash. The question of grower debt and repayment is, therefore, a central one in terms of local risk. Jaffee (Volume II) suggests that some debts were occasionally devalued or written off (especially during the early years of vegetable contracting) as a means of ensuring grower interest.¹¹ In other cases, however, the terms of trade between input costs and surplus appropriation are central. The SEMRY project contractually appropriates between 10 and 15 percent of the rice harvest of growers in addition to credit repayments, and it is clear that debt has forced eviction on many occasions. The debt issue is naturally shaped by the profitability of the crop itself, and in cases such as STA in Malawi, where profitability margins and grower productivity are low, the growth of debt is important. Perhaps the most dramatic

case of debt as risk is seen in some tobacco schemes that require significant start-up capital (for example the curing shed and nursery preparation). Currie and Ray (1986) refer to the rapid growth during the 1970s of debts among tobacco growers in Central Province, Kenya, in which land and property were seized by the government (for BAT). Growers must pay outstanding loans before leaving the scheme and, in the event of default, the grower naturally loses all creditworthiness. Should the farmer stay in BAT to pay off the loans, the long-term effect is a reduction in grower autonomy. Of course, the question of debt raises the issue of contract enforcement and eviction capability. In most cases (including some of the large state-private outgrower schemes), the question of seizure or eviction remains moot. BAT, SEMRY, and some of the palm-oil schemes (where based on tenancy) have exercised this power.

6.3. Food security

A critical question is the extent to which contract-farming schemes create insecurities in food availability. It is clear that self-sufficiency--the degree to which households produce their own staple foods--was a goal rarely achieved in many of the contracting regions immediately prior to contract production. Therefore, the question concerns the extent to which contracting has compounded food insecurities. In virtually all of the cases studied, mobilization of labor for contracted commodities has resulted in increased food purchases. The consequences of food purchases and a decline in household food production are, however, ambiguous. In principle there is not necessarily a relationship between food commercialization and poor nutrition and hunger (Cowen 1983). In some cases, such as sugar and tobacco in Kenya, there is a suggestion that periods of hunger have occurred--Williams (1985) refers to poor child nutrition--but it is unclear for whom. The Mumias case suggests that a decline in local food production had elicited commercial food production (hybrid maize) in neighboring districts (Mulaa 1980), but grain prices have risen rapidly throughout the 1970s and wage workers bore the brunt of food-price inflation. A controversial study by Hitchings (1980) suggests a relationship between good nutritional status and sugar production.¹²

Daddieh (Volume II) shows that virtually all palm-oil outgrowers in Ghana are far from self-sufficient, and that dependence on purchased foods has grown rapidly and created problems of food availability. Conversely, Palmer-Jones (1987) believes that tea has had little impact on food production in Malawi, because the numbers involved are small, and tea-growing areas have soil that is acidic and generally not suitable for food production. There have been problems associated with short-term food availability in the gestation period of contracting schemes, especially for perennials such as tea and palm oil. Likewise, both the Jahaly and Bakalori schemes generated food

problems associated with the loss of land use during construction and inadequate compensation (Beckman and Andrae 1985; Herzog 1985).

Although there is an important tension between contracting of non-food commodities and sustaining local food production, the empirical record on the nature of these conflicts is somewhat limited. Some of the schemes establish acreage limitations (some of the Kenyan fresh-vegetable projects) or use land unsuitable for food (STA, Malawi) with apparently little consequence for domestic food production. As noted above, some of large outgrower schemes suggest otherwise. In addition to a volatile local cereal market, Mumias may have compounded domestic food problems by focusing on smaller growers (after each six-year contract the renewals have favored smaller producers), who may have actually reduced acreages for food among land- and resource-poor families. Working in a cotton area, Bassett (1986) suggests that it is the land-poor who face major labor bottlenecks and limited resources and experience a decline in self-sufficiency and a local grain market characterized by strong seasonal price swings. The Mumias experience suggests that reduced or indeed stagnant local maize and millet production is felt most sharply by permanent or migrant wage laborers who confront a wage-good market in which prices are high.

In another context, Mueller (1981) felt that the Tanzanian state's abrogation of tobacco credit, specifically targeted to hiring labor, limited the capacity of middle peasants to devote time to maize. The results were that less food was grown, tobacco inputs (fertilizer in particular) were diverted to foodstuffs (in an attempt to increase yields in the face of acreage decline), and tobacco yields have been especially low. In schemes where foodstuffs have been contracted (Jahaly, SEMRY), there is no question that food output has increased in absolute terms. But food security has been partially privatized (in income terms) by men, rice output has a high tradeoff in reduced millet production, and it is unclear whether intrahousehold food availability has substantially improved.

6.4. Contract manipulation

Frequently, a fundamental feature of contracting is the obvious lack of understanding of the contract's content by growers. This constitutes a major risk in addition to the distribution of risk actually contained within the contract and/or manufactured in contract interpretation. Jaffee (Volume II) shows how farmers delivered beans to the Njoro cannery in 1982 in insufficient quantities to cover their first loan (largely because the contract was in English). Likewise, the Jahaly scheme, as it pertains to land, is widely misunderstood by growers. Raikes (1978) raises the question of explicit contract manipulation in the case of Kenyan horticulture through extension

agents using the time of contract signing (an important variable influencing the time when planting can begin) as an opportunity to collect bribes. In addition, the whole arena of quality is one of both manipulation and conflict (on both sides). In the Asian-vegetable scheme in Kenya, growers felt that quality standards were manipulated and second-class produce (so classified) was sold at premier-quality rates. The Kenyan tobacco industry is replete with conflicts between cooperatives and BAT over standards and their interpretation, although in most cases growers have little to show for it (Currie and Ray 1986).

The growers, for their part, have various strategies: there are innumerable instances of growers buying the favors of local company representatives to upgrade, and to "hide" low quality produce or add stones to produce to increase weight. The quality-control issue as a source of risk depends in large part on the presence of a parallel market. In the case of tobacco, BAT's statutory monopoly and a limited spot market allow the contractor enormous power. Jaffee (Volume II) shows how this is less true for vegetables grown in proximity to other markets or middlemen. In any case, whether through ignorance or manipulation, the contract is an arena of conflict and mistrust, and many growers do not perceive the written contract as an enhancement of security.

6.5. Price risk for producers

There are a variety of ways in which price is experienced as risk. The first involves long-term volatility. Chapter III of this report shows how, in the case of many horticultural schemes, prices vary dramatically through time. The reasons for this include competition, quality variation, weak intermediation, limited carrier space, and high wastage. Indeed, the life histories of businesses themselves are volatile (and often fragile). Second, price is transmitted in some measure to the small grower as a derived demand reflecting U.K. orders, allocation of cargo space, supply from large farmers, and other factors, all of which make for changeable prices. Prices frequently change from those agreed upon during contract signing, for example. Third, prices received by farmers are subject to various forms of malfeasance. There are many instances of local buyers cheating growers or breaking the contracts. Again farmers, depending on the local spot market, react accordingly if the opportunity exists. And fourth, there is the question of price determination itself. In some of the large schemes (such as BAT or Mumias), prices are determined and presented as a fait accompli to growers (even in those cases where grower representation exists). The absence of input into price decisions, and more generally of representative organizations, renders the price question essentially off-limits for growers. Obviously, the world market largely determines how favorable prices will be; both Palmer-Jones (1987) and Heald (1986) refer

to good prices since 1982 as the source of profitability within the tea and tobacco sectors.

Another frequent price risk pertains to the stability of the terms of trade. Jaffee (Volume II) notes that among the women French-bean growers, costs of inputs rose much faster than the price of beans. Input costs rose 77 percent during the period from 1982 to 1986, while farmgate prices rose by 29 percent. Prices for beans for fresh export were buoyant, but the women contractors were not within the required 150-mile radius of Nairobi to make use of the spot market. A similar case occurred in the SEMRY rice scheme with respect to the fixed fees such as interest charges and maintenance, and particular dues (production inputs) paid by growers. Over the period from 1973 to 1980 both increased by 180 percent, while the price of paddy rose by only 40 percent (Tchala-Abina 1982:169). When the price of rice was increased in the late 1970s, an increase in dues immediately followed. The terms of trade have moved sharply against growers--dues/fees represented 35 percent of farmer income until 1979 and 46 percent since. This, combined with both extreme yield variation and the manipulation of contracts by SEMRY (as a way of regulating supply), has resulted in "a significant fluctuation of farmer income" (Tchala-Abina 1982:173).

6.6. Risk associated with poor management and oversupply

Parastatals are often criticized for their lack of appropriate structures of incentives. In the case of STA in Malawi, Palmer-Jones (1987) reveals how structural problems (the payment of average revenues and lack of accountability) and efficiency issues (poor planting materials and poor service delivery) made tea cultivation for the growers not only a low-profit enterprise (at least until the high world prices of the early 1980s) but also a risky production exercise. By 1982, only 56 percent of the planting target had been achieved, and total output was 30 percent below the target. Okyere (1979) shows how the Asutsuare and Mankesim sugar schemes in Ghana were not economical from the growers' perspective in view of prices and the shortage of labor. (Furthermore, the management's machinery-hire charges were prohibitive for growers.) The Cadbury scheme in Nigeria, which used the Ministry of Agriculture as a vehicle for service provision, actually created substantial uncertainty for tomato growers due to poor extension, the regular absence of buyers (resulting in rotting produce), local corruption, and the late delivery of inputs. At least 50 percent of all production inputs were late, resulting in uniformly low yields (one-third of inputs were at least seven days late). On average, two-thirds of production was sold on the spot market, not only because of low prices offered by Cadbury, but also because of the insecurity of Cadbury's purchasing arrangements. This scheme also reflects how local politics create production risks, since the scheme was subverted by local chiefs--in one part of the scheme a district

head accounted for 50 percent of production--who monopolized both pumps and inputs. A part of the scarcity of supplies was thus politically created, and farmers responded by bribing Cadbury officials to permit sales to the local market (Orewa 1978; Agbonifo 1974). These growers' risks were reflected by enormous disparities in yields between well-connected growers and smallholders. This resulted in low average yields, often less than one-third of Cadbury's expectations.¹³

Management inefficiency was also shown to generate risk in three other arenas. First was the question of land compensation and expropriation. The second pertained to land allocation and the threat of loss or speculative dispossession facilitated by corruption. Barclay (1977) and Wambia (1979) refer to a rapid growth in land values and speculative land activity in Mumias. Under similar circumstances many original farmers at Bakalori lost access to land. Jaffee (Volume II) also shows how the Asian-vegetable schemes were associated with an increase in lease and land prices--the latter grew from 400 Ksh per acre in 1983 to 2500 Ksh in 1986 in the Matuu area--which severely limited access to land resources for the rural poor. The third issue pertains to problems of oversupply. Many of the horticultural producers found themselves incapable of selling produce--due to price, air space, or demand difficulties--and growers saw their produce rot without receiving payment.

6.7. Self-exploitation and household risk bearing

One of the great insights of Chayanov was to identify the special qualities of the household-labor process. The exchange between contractors and contract farmers is not a simple purchase of labor power as in the typical firm. Rather, in order to secure simple reproduction, some peasants will continue to produce commodities even if prices are falling. This characteristic of peasant production implies that households may work harder or longer to meet the goals of survival and produce commodities cheaply.¹⁴ Mueller (1981) has argued that this was in effect the strategy of tobacco production in Tanzania (TAT), which focuses on a middle peasantry caught in an extreme price squeeze. Some peasants, with the enormous labor intensity of tobacco, are unable to meet household subsistence needs, with the result that some growers were compelled to sharecrop with new immigrant growers.

The capacity for self-exploitation in some households is especially important in labor-intensive crops where quality is also important. In many contracting schemes, the management that takes credit repayment as a crop share in effect operates a sharecropping arrangement. Consequently, labor intensity and quality is compatible with the incentive structure of such contracting arrangements. Stern (1972) shows how for smallholder tea in Kenya, which requires 2,000 hours per acre per year,

household capacity for labor intensification is an important source of KTDA profitability. Likewise, Heald and Hay recomputed Buch-Hansen's data (1980a) for tea growers among Buret and discovered that their return to labor (on average) is about half of tea estate workers (1985:92). If one includes an assessment of income from subsistence crops, the total income of tea growers is still barely equivalent to a tea picker's income in a bad year. Tea pickers are, of course, assumed to be among the poorest of the rural poor. Palmer-Jones' (1987) analysis suggests similar processes at work in STA in Malawi, compounded by poor ecological conditions, low-grade tea-planting materials, and a poor incentive system.

This self-exploitation clearly generates burdens within the family--Stern (1972) notes that 70 percent of the arduous tea picking is done by women--but it is also part of the larger system by which risk is diffused for the buyer/processor under contracting. Production risks remain with the grower while buyers control quantity, quality, and price. For example, in the case of tobacco in Kenya, contract growers work harder--with the risks and burdens that such labor intensity confers--yet take the risks of crop failure. As the Chairman of BAT put it, "the dispersal of growing helps protect us from the vagaries of weather" (cited in Currie and Ray 1986).

7. Community, Political, and Social Implications

In his contribution on agribusiness and rural change, Williams (1985a) mentions the "conflict and disorder" generated by rapid changes associated with contracting. The rapidity of such change is especially dramatic in the large outgrower schemes where, in short periods of time, massive changes in labor relations, the work process, and living conditions are effected. Towns may experience extremely rapid growth, and material conditions undergo change in the short term. At the same time there are more subtle changes in local politics and in grower consciousness. These community and social dimensions of contracting are extremely difficult to document, not only because they are regularly ignored, but also because they presuppose a certain longevity on the part of the schemes before such changes are necessarily visible. Both Jaffee (Volume II) and Barclay (1977) refer to rapid local growth associated with the infusion of monies into sugar and horticultural developments in various parts of Western Kenya. In Mumias there is a general sense of a male-dominated company town with pronounced boom and bust qualities--Allen (1983) refers to the town going in for "wine, women, and song"--and extreme social dislocation. Alcoholism, prostitution, and a "binge" pattern of social behavior¹⁵ has led some commentators (including Williams 1985c) to lament the "lost opportunities" in Mumias. Recent evidence suggests that the

sugar bust of the last few years has increased the social tensions and contradictions in Mumias.

Some of the large outgrower schemes (especially ones that are state-sponsored) also provide community services, usually to employees and settlers, and occasionally at subsidized rates to outgrowers. At Mumias, 5,000 employees have access to medical care and schooling, and the oil-palm schemes in Ivory Coast (and to a lesser degree in Ghana) had resettlement components in which villages were constructed, and churches, water, and housing were provided from scratch.¹⁶ It is clear, however, that many of the services are focused on the estates, and Daddieh (Volume II) notes how some growers have no access to these services. Similarly, at Vuvulane, Tuckett (1977) refers to the efforts of the CDC from the early 1960s to supply schools and shops, but the growth of population has been rapid--an increase of 300 percent from 1973-1985--and the demand for services vastly exceeds local capacity. Indeed, a recent report on Vuvulane refers to the shockingly bad local conditions (especially for workers) and the collapse of services (McFadden 1983).

In general, however, the smaller contracting efforts provide little in the way of direct services. By contrast, the larger state- or joint-venture schemes provide social services that, however slight, confer a privileged status upon the growers. For example, SODENKAM in Cameroon provides 26 teachers, 14 health workers, and six dispensaries for 2,000 pioneer settlers; the 16,000 other inhabitants had only nine teachers and four health centers (Tchala-Abina 1982:358). The adequacy of these services as functioning entities is rarely discussed, however, and Tchala-Abina implies that they leave a great deal to be desired. Indeed, the settler communities that were created de novo have been quite unsuccessful and characterized by some "social unrest."

7.1. Grower organizations

As indicated earlier in the report, grower organizations are notoriously weak or entirely absent in most African contracting schemes. There are three broad patterns. The first is the nominal character of grower representation, which raises the larger question of grower power (and ignorance) about the schemes (and the contracts) of which they are part.¹⁷ STA in Malawi, for example, has no genuinely strong or vociferous grower body either on the Board or through local political representation. Growers' representatives have never been qualified or trained to monitor the performance of STA management. There is no unified or articulated "grower interest" as such, nor any grower representatives on the powerful Staff and Finance Committee of STA. Similarly, there is no role for Kenyan co-ops within the Mumias scheme, and no formal two-way bargaining, although local MPs serve as a channel for local grower sentiment (but Mulaa

[1980] suggests that this is a highly individualized process). Neither STA nor Mumias have shareholding arrangements for growers. Workers and employees are not unionized.

A second pattern is seen in the smaller contracting projects where loosely structured cooperatives draw growers together under a chief or chef du secteur (see Horton, Volume II). These co-ops may or may not be part of formal cooperative movements, have limited functions--usually marketing and input distribution--and have no function in price determination. Many of these co-ops effectively rest on local ties of patronage and clientship (especially where the contractors are limited to a small number of large growers), and often become the mouthpiece of influential local growers (see Agbonifo 1974).

A third pattern, which is actually an exception, pertains to the case of KTDA, which is conventionally seen to have an active grower organization linked to a system of incentives that has accounted for the much-lauded success of the project as a whole. In this regard, Swainson (1986:43) notes that:

"Grower participation has been another positive aspect of the tea scheme in Kenya. The KTDA has since the 1960s encouraged farmers to participate in both policy making and implementation. The elected divisional and district tea committees, the provincial tea boards, and farmer representation on the KTDA board itself have provided formal channels for advising on the land-allocation process, transmitting KTDA policy and forwarding grievances. Originally the KTDA staff dominated at all levels, but the growers have increasingly taken the initiative and would appear to make a strong input into policy."

While it is clear that grower organization is better developed and articulated in KTDA, it is much less obvious what sort of impact the smaller growers have on critical policy decisions. Smallholders' incentives (and prices in particular) are central to KTDA success, but the local committees and boards have little effect on price, and are predominated in any case by large growers. We will show in the next chapter that viable local organizations are critical for generating local and regional development, insuring that value-added remains in the local region, and avoiding the kinds of political problems described below.

7.2. Local politics

The lack of grower organizations and formal bargaining arrangements is, of course, not antithetical to political action among growers on the schemes. Indeed, the large outgrower schemes have been plagued by a variety of individual and

collective responses to the new labor process in the absence of grower organizations. In one case--Bakalori--the contracting relations were literally subverted by peasant insubordination and collective violence between growers and police. The starting point for grasping grower politics is the intensity of labor under contract, and the question of control of labor and land embodied in the new labor process.¹⁸ Especially in cases of subordinated production and centralized management (such as Vuvulane and SEMRY), growers can potentially lose a large measure of autonomy and, in some cases, access to resources. There are three sorts of local political responses that appear in the cases under review:

1. Collective action involving strikes and picketing. This was seen most dramatically among the 5,000 farmers at Bakalori who barricaded themselves into the project in response to dispossession and lack of compensation. Twelve-hundred cane outgrowers, prompted by the company's refusal to pay growers, boycotted the Ramisi sugar factory in 1985 in Coast Province, Kenya (Daily Nation 8/15/85). The activities of Mandinka women documented by Carney (Volume II) is an interesting example of women organizing themselves through traditional reciprocal labor groups around the issues of lost access to land and non-customary labor demands.

2. Individual farmer resistance (Scott 1985), seen in a battery of efforts by growers to subvert contract control. Many of the case studies document the illicit use of fertilizer on food farms, crop weight manipulation, sale on spot markets, and so on.

3. Political affiliation between large growers and local politicians. This has been documented in both Kenya and Malawi.

These brief examples simply highlight the fact that contracting is surrounded by what one might call "production politics" (Burawoy 1985); efforts by growers to resist contractual stipulations. The centrality of controlling land and most especially of controlling the allocation, timing, and use of labor, converts the production process (both within the household and between households and management) into an arena of conflict. Many of these struggles are prosaic, but in conditions of labor shortages, contracting is necessarily conflictual. However, there are few if any formal channels for participatory involvement by disgruntled growers. Jaffee's work (Volume II) shows the "politicization" of a local vegetable scheme where growers without effective participatory organizations took their grievances to the local politicians. The lack of intermediary organizations is a major problem that donor/government should

address prior to investment in any contracting scheme (see Chapter VIII).

8. Conclusion

This chapter has demonstrated that contract farming schemes do generate significant incomes for farmers, but that these gains are not equally shared by different households or household members. We have also shown that patterns of labor allocation are drastically changed under contracting schemes, and that these processes can have negative effects on food production and women's status. The risks associated with the new production process are stated in terms of food-security problems, farmer indebtedness, reliance on volatile markets, and decreased farmer autonomy. The next chapter examines the regional and local development implications of these local processes, paying particular attention to whether or not increased farmer and scheme revenues have generated significant economic multipliers in contract-farming areas.

Endnotes

1. Of course, some of the vegetable schemes detailed by Jaffee in Volume II have checkered histories, and the Cadbury scheme was something of a fiasco because of the low prices offered in relation to open-market prices. Likewise, STA staggered along at marginal rates of return until the price increases on the world market in the early 1980s.
2. The labor intensity applies to food crops under irrigated conditions. The Jahaly contract scheme requires 60 percent more labor per unit of land than traditional rice production.
3. While men now work more in wet-season rice under contract (and less on upland crops), their total work in agriculture has actually decreased, whereas women's labor input has increased (von Braun and Kohm 1987).
4. This is parallel to Bassett's discussion of how contracted cotton prompted a redefinition of women's "working week" in Northern Ivory Coast. Women again use "custom" as a basis for negotiating men's claims on their labor. Jones (1983) provides another instance over negotiating intrahousehold food obligations (for sauce preparation) among the Vele and Massa in Cameroon.
5. Jones shows that some women continue to work for their husbands despite being paid at a lower rate than if they hired themselves out at wage labor. Married women were more allocatively inefficient with respect to their rice activities than independent women, in large measure because the compensation received ("the wage") from their husbands induced less effort on upland fields.
6. Evidence on eviction of tenant growers is uneven. Large schemes such as Mumias, GOPDC (Ghana) and STA (Malawi) all possess rights of eviction as specified in the contract. Figures on grower turnover are, however, patchy. Daddieh (Volume II) notes that the GOPDC scheme exercised the right of eviction (unlike SODEPALM in Ivory Coast in which freehold prevailed), a process that was facilitated by a contract in which the farmer was assessed at various stages of land preparation, planting, and maturation.
7. Many farmers were made landless and others received no compensation for a loss of three consecutive harvests during construction. The project avoided the computation of such real market values, since this would have massively affected the already uncertain cost-benefit calculations (Jega 1985; Wallace 1980). Following a farmer uprising/massacre in 1980, a further 19 million naira were, in theory, distributed.

8. A licensee may be evicted, with three-month's notice, without breach of contract after the expiration of the nine-month license.

9. It also appears that land prices have fallen since 1981.

10. Jaffee's case of women bean growers (Volume II) is an important exception which he feels indicates a growth in female autonomy over familial affairs. It is also possible that women entering wage work either as farm labor (such as STA, Mumias, or Jahaly) or in factories (Texagri) may, as some feminists suggest, confer a degree of liberation from patriarchal oppression (see also Clapp 1987).

11. In the Njoro cannery case, 15 to 20 percent of growers had outstanding debts. The company only pressed for repayment in cases of malfeasance, and limited the proportion of the harvest as repayment to ensure some cash income for growers (which at best was limited in 1982-83).

12. Until the IFPRI study on nutrition and commercialization is completed, some of these questions remain unanswered.

13. KTDA and BAT in Kenya are apparently two notable exceptions to the inefficiency of input provision and incentive problems of parastatals (see Lamb and Muller 1982; Heald 1986). The centralized sugar and rice schemes, in which most operations are undertaken by management (there is really little grower autonomy and control at all), are likewise less risky with respect to input provision, product collection, and so on.

14. The notion of lengthening the working day and the intensification of household labor--the so-called simple reproduction squeeze (Bernstein 1979)--permits a devaluation of household production and the cheap acquisition of commodities by buyers/processors through unequal exchange.

15. Williams (1985c) and Barclay (1977) mention the rapidity with which monies are spent and the widespread criticisms by women that husbands disappear after harvest payments, often for extended periods of time.

16. SODEPALM, for example, spent 35 billion CFA on 500 km of feeder roads between 1963 and 1979.

17. This is contained within the commentary by a Mumias sugar grower: "We do not know how our canes go in [to the factory] or how the sugar comes out. We only get money. . . ." (Barclay 1977:187).

18. A Mumias sugar grower (male) and a Tanzanian tea grower (female) comment as follows: "Since you agree to plant sugar there is a rope around your neck that connects you to the Company," and "work has no boundaries, it is endless." See Mblinyi (1986) and Barclay (1977).

CHAPTER V

ECONOMIC AND REGIONAL MULTIPLIERS ASSOCIATED WITH CONTRACT FARMING

1. Introduction

In this chapter, the analysis moves beyond impacts at the local/scheme level and asks the question: Do contract-farming schemes have important (and measurable) effects upon the economy outside the immediate bounds of the scheme?¹ The question is crucial for any investigation into the potential for contract farming to generate sustainable development. This chapter examines the impact of contracting schemes on regional multipliers and development. Benefits to regional development from increased agricultural investment and farm incomes are usually perceived in terms of linkages to other sectors. Such economic linkages often take a period of 10 to 15 years to work themselves out, especially when secondary "spillovers" (e.g., growth in market towns and social services) are considered. With many of our case studies, especially the rice scheme in The Gambia and certain vegetable schemes in Senegal, recent implementation makes it difficult to examine their regional impacts. Certain criteria, however, such as current or potential employment, can be examined to predict whether or not there will be significant regional multipliers in cases where time series data are lacking.

Table 5.1 evaluates several contract-farming schemes on the basis of different regional indicators. These indicators include:

- contract farmers as a percentage of regional population;
- net farmer income;
- employment generation;
- effective local organizations;
- use of regional services, facilities, and industry;
- location of processing facilities;
- regional reinvestment of scheme surplus;
- investment in infrastructure; and
- social and other services.

Table 5.1

Indicators of Regional Multiplier Effects

	Mumias (Kenya)	Ivory Coast Palm Oil	Ghana Palm Oil	RHE (Kenya)	Malawi Tea Authority	Njoro Canners (Kenya)	Jahaly Pacharr (Gambia)	Senegal Horticult	Senegal Poultry
Farmers as Percent of Regional Population	XXX	y	y	y	y	XXX	XXX	y	y
Net Farmer Income	y	y	y	XXX	XXX	y	y	XXX	XXX
Employment Generation	XXX	XXX	y	XXX	XXX	y	XXX	y	y
Effective Local Organizations			XXX				y		
Use of Regional Services, Facilities and Industry				y			y	y	y
Linkages with Regional Market		y	y				XXX	y	XXX
Processing done Locally	XXX	XXX	XXX		XXX		XXX		y
Regional Reinvestment of Scheme Surplus	y	y			y		y		
Investment in Infrastructure	XXX	XXX	y		XXX		XXX		
Social and Other Services	y	XXX	y				y		

XXX = Significant
y = Slight Significance
(Blank) = Absence

Quantitative estimates of each of these factors was not possible, but information was sufficient to estimate their approximate scale or indicate their presence or absence. Emphasis was given to variables that reflect either (1) strong value added for the region or (2) investments that might stimulate regional development. Forward and backward linkages (current and potential) associated with each of the contracting schemes were examined, particular attention being paid to linkages with other economic activities in the region. Consideration was given to multipliers associated with the organization of the scheme itself and with the use of farmer revenues.

In general, given the high costs of many contracting schemes (see discussion below) and the amount of income generated, regional multipliers were found to be disappointing. Part of this relates to the way in which contracting firms operate, particularly those with highly centralized management systems. Barclay, in the case of the Mumias sugar scheme (Kenya), notes that the growth in market centers and regional service industries has been disappointing for a project of its size:

Spare parts for machinery, even down to the level of nuts and bolts, are imported from overseas. Local engineering work is carried out by firms in Kisumu, 45 miles away, or in Nairobi. Haulage of mill-white sugar from the factory to the Bungoma railhead (16 miles north) or to depots of the Kenya National Trading Corporation (KNTC) in Kisumu and Kakamega is controlled by large transport firms based outside Mumias Division. A well-stocked retail shop, built by MSC and leased to a trader from North Wanga, is situated on the estate and is thus especially well placed to cater for the shopping needs of employees. There is no other shop of this kind on the central estate. Groceries, meat and vegetables for the managerial staff, whose spendable incomes are relatively high, are purchased at Eldoret (75 miles away) and delivered twice weekly in a company van . . . Molasses, the by-product of sugar processing, is transported by road to the railhead. From there, most is shipped to the port of Mombasa for export, and a proportion is sold to a cattle-feed venture 250 miles from Mumias, in which Booker McConnell is a principal shareholder. The sugar project, in practice, depends on Mumias township only for postal services and a telephone exchange (in fact, there is also a radio-call facility at the company which is independent of the latter) (Barclay 1977:381-382).

The paucity of linkages between the Mumias scheme and the larger regional economy is typical of many of the larger contracting schemes observed in the study. As Table 5.1 demonstrates, contract-farming schemes rarely use local services and inputs or reinvest in the region. Opportunities for

catalyzing regional development are missed because of the enclave nature of many of these schemes. Their export orientation and self-sufficiency with respect to provision of inputs and services insulate them from the regional and local economies, allowing certain comparisons between them and plantation-based economies.² What economic benefits stay in the region are in the form of payments to contract farmers and employees.

The schemes that generated the highest farmer incomes-- Kenya Horticultural Export Company (KHE) and the Senegal horticultural schemes--provided few investments in infrastructure, minimally utilized local inputs and services (including transport), and involved only a small percentage of the regional population (see Table 5.1). They concentrated solely on the export of fresh produce, which requires virtually no processing other than packaging. Rather than investing in infrastructure and market towns, these enterprises sought areas where infrastructure was well developed and market access relatively easy. These schemes are located near capital cities (in these cases, Dakar and Nairobi), where regional economies are relatively advanced and international air transport is available. While their contribution to farmer incomes is significant, their regional impact is less than for many of the other contract schemes.

2. Multipliers Associated with Farmer Expenditures

Data collection on household-expenditure patterns requires multiple visits, with surveys at different times of the year depending on seasonal climatic changes, timing of harvest, etc. It was not possible to collect in-depth expenditure data for most of the schemes, but we were able to point to the major types of investments being made by farmers. The study distinguishes between two types of cash expenditures: (1) investment expenditures and (2) basic consumption/input expenditures.

The study finds that expenditures on investment are limited mainly to the richest 10 to 15 percent of contract farmers, who usually earn upwards of \$1500 per annum, while the bulk of farmers make only basic purchases (food, education fees, and agricultural inputs). Although contract farmers' incomes are generally above the average of African farmers, they are by no means high. Among contract-tea growers in Malawi, for example, only the very richest (the top 4 percent of growers) had incomes in excess of \$1800 per annum in 1985/86, and 40 percent had annual incomes below \$300 (see Figure 4.2). Even at the upper end of the income scale for tea growers, revenue for nonfarm investments and purchases of nonfarm goods is limited, especially in cases where basic foods had to be purchased.

Among the richer contract farmers there are clearly distinctive patterns of local investment. Buch-Hansen (1980a) identified two broad patterns: for the middle peasantry a consumption-focused use of limited surpluses, such as household improvements and purchases of food. Heald (1986) believes that a major reason for the growth of tobacco production among the middle peasants was the genesis of monies for food purchases. Among the accumulators there were three uses of surplus:

Investing in tractors, trucks;
Investing in land; and
Investing in trade.

These accumulation strategies approximate the rural elite identified by McFadden (1983) in the Vuvulane, though a proportion of their investment in land yielded further rental and sharecropping income.

However, these polarized patterns of investment and consumption may be limited in their applicability for all contracting schemes. Some of the cases suggest that wealthy growers invest in what one might call social structure and social relations as much as productive investments. The Cadbury case indicates that a major source of investment was marriage, gift-giving, and livestock. Carney (Volume II) discovered a similar pattern in The Gambia; six of the twelve households in her study had invested rice surpluses to marry new wives. The other two major expenditures were livestock and small consumer durables. Very few farmers invested in the agricultural package strongly championed by the project management. Heald's (1986) example among the Luo identified school fees (see also Jaffee, Volume II), marriage, and "investing in people" as the archetypal patterns of investment among wealthy tobacco growers. Heald's work suggests that although there was some land purchase and a measure of "excessive" consumption (such as record players or alcohol), the primary desire was to solidify the traditional household structure by providing offspring with land and education.

Nonfarm business investments stimulated by the increased farm incomes tend to be in retail stores, which predominantly distribute imported goods. Large complexes of retail establishments are associated with many of the contracting schemes and have grown mainly because of the scheme. For example, at the Kibirigwe vegetable scheme (Kenya), an inventory of the market center (Kibingoti) adjoining the scheme revealed that since the scheme's initiation in 1981, the number of retail stores more than tripled and a large open-air vegetable market also was started (Little, field notes 1987). The Asian-vegetable scheme at Matuu, Kenya has led to an equally dramatic growth in local retail activities (Jaffee, Volume II):

The impact of Asian vegetables can be most clearly seen in the development of Matuu town. In 1979 the town was a small site with only two shops. The town has grown at a phenomenal rate and now includes numerous streets filled with shops and various service businesses and cottage industries (Jaffee 1987:106).

In the Jahaly Pacharr case (The Gambia), Carney also notes the proliferation of new traders and businesses that have come into the area since the inception of the contracting scheme (Volume II).

In examining patterns of nonfarm investments in contract-farming areas, two important points must be acknowledged. First, the proliferation of business activities does not necessarily mean that local businesses are owned by local farmers. While in the case of Kibirigwe (and perhaps Matuu), most retail stores were owned by local farmers, in the Mumias (Kenya) and Jahaly Pacharr schemes they were owned by outsiders who had migrated to the area to take advantage of business opportunities. In terms of retaining revenue in the area, profits by outsiders are likely to be repatriated to other regions of the country. A second factor to consider in the analysis of nonfarm investments is the role of state policy. Most African states have trade and industrial policies that limit the types of nonfarm activities in rural regions. In Kenya, for example, trade and investment policies favor the large urban areas and there are only a limited number of activities for investment in rural areas. Consequently, during periods of commodity "booms" (i.e., high agricultural prices), urban areas often reap more of the economic benefits than rural locations (Bevan et al. 1987). Thus, trade and investment policies have some impact on the types of nonfarm investments made in association with contract-farming schemes.

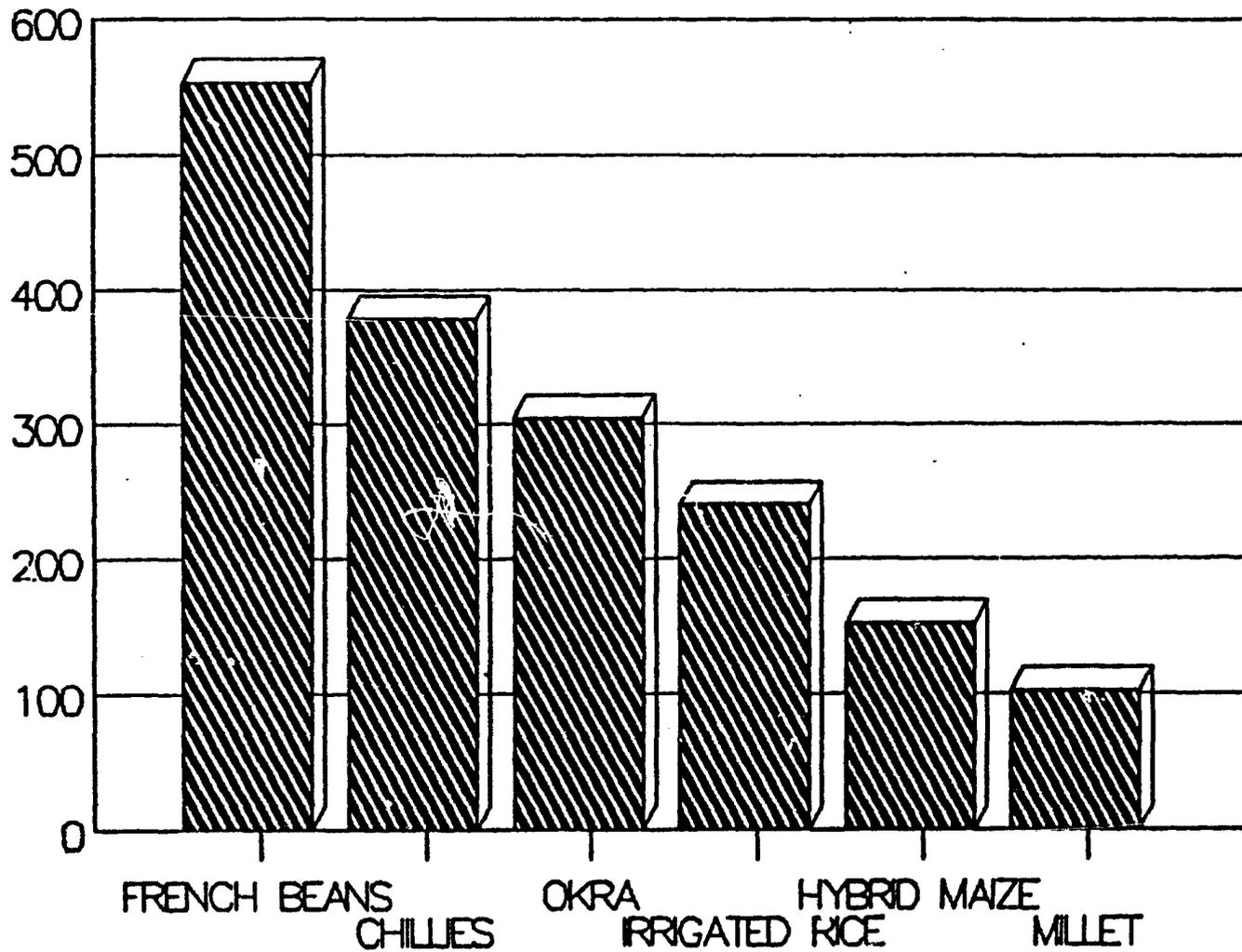
3. Employment

Employment generation was examined in the study both in terms of on- and off-farm labor forces. The potential for creating employment of both types is considerable in contract-farming schemes. The labor intensity of most contracted commodities results in significant increases in the demand for on-farm labor. In comparison to traditional African cereals, labor demand for most contracted commodities is high (see Figure 5.1). In our field studies we found that the hiring of farm labor was widespread among almost all contract farmers. In Malawi, for example, 80 percent of contracted tea growers hired labor; and in Ivory Coast 89 percent of contracted oil-palm producers hired labor. These figures are considerably higher than the rates for wage labor use in most African farming systems.

WORK DAYS NEEDED PER CROP PER HECTARE

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WORK DAYS



At an aggregate level, the contract-farming schemes examined generated approximately 0.60 to 0.80 wage farm workers per contracted farmer, which compares very favorably with most other commercial agricultural schemes (cf. SARSA's work on agricultural settlement schemes; Scudder 1984). For example, 8,582 contracted smallholders in Ivory Coast employ more than 6,000 wage earners in oil-palm production. On the Jahaly Pacharr scheme in The Gambia, Carney (Volume II) found that 75 percent of the irrigated-rice farmers hired labor at least seasonally to overcome labor bottlenecks in transplanting, weeding, harvesting, and threshing. Households spent from 3 to 10 percent (\$28 to \$84) of an average plot's annual production for hired labor.

3.1 Effects of contract farming on labor markets

Employment opportunities in contract-farming areas have influenced regional labor markets and, in some cases, have slowed the rate of rural-urban migration. These schemes have encouraged high rates of in-migration on a seasonal or longer-term basis, with many of the migrants coming from other regions or neighboring countries. Ugandans and Rwandans are employed in the sugar schemes in western Kenya; Malian and Burkina Faso laborers on the palm-oil schemes in Ivory Coast; Mozambicans on the smallholder tea schemes in Malawi. The projects have also appeared attractive enough to dissuade participants from migrating to other regions, particularly urban areas, in search of employment. For example, Jaffee notes in the case of the Asian-vegetable schemes:

The employment opportunities created by expanding Asian-vegetable production has led many young people in parts of Machakos District to remain in their home area rather than migrate to Nairobi or other locations in search of work . . . [The impact of the KHE project is] its wider stimulation of Asian-vegetable production . . . [and] its injection of increased income and employment opportunities into a relatively deprived area (Volume II:75).

Carney's comments also point to the effects on labor markets and migration:

A[n] important impact of the Jahaly Pacharr is the interest it has generated regionally in irrigated-rice cultivation. Many migrants from rice-growing areas of western Gambia, Casamance, Senegal, and Guinea Bissau have come to the project area to rent the small-scale perimeters that have become available since project development. In one village . . . there are several small-scale schemes that are operating primarily because of the influx of migrants who rent rice plots in the dry season. . . . The Jahaly Pacharr project thus has had a positive impact on increasing

regional interest in (1) double cropping and (2) irrigated rice cultivation (1987:283).

Another facet of the employment generation among the farmer participants results from the practice of contracted farmers subcontracting to other small growers. Jaffee's research in Kenya indicates that this is a fairly widespread phenomenon in the horticultural sector there. He reports that in the KHE scheme, many contracted farmers subcontract to several others, and one of the larger farmers has subcontracts with 200 other small growers. Horton also reports on a type of subcontracting among vegetable growers in Senegal. The subcontracted farmers can be viewed as employees of the larger farmers, although they operate independent farms.

In addition to generating subcontracts, the vegetable schemes in Kenya have a significant impact on the cost of part-time agricultural labor. In the vegetable-contracting areas of Matuu, wages rose from 5 Ksh/day in the early 1980s to 10 - 12 Ksh/day in 1986. Similar increases in the cost of wage labor were experienced by farmers on the Mumias scheme. In 1972 - 73 the cost for weeding one acre of cane was Ksh 30 - 40, but by 1975 it had risen to Ksh 50 - 75 (Barclay 1977:233). While time series data on agricultural wages are not available for Ghana, Daddieh notes that contracting schemes have been unable to recruit labor because its costs have increased so much in recent years. In some of these regions, a rapidly rising agricultural wage scale has negatively affected production of lower-value crops--principally food crops--due to competition among producers for an already scarce labor supply.³

The genesis of the agricultural labor market associated with contract farming is, nonetheless, problematic. In Kenya, for example, the Western Provinces have historically been labor reserves characterized by a shortage of adult males who have migrated out of the area. Indeed, the labor shortage has been a recurrent problem in the sugar belt, especially for the arduous harvesting tasks. Wages have been seasonally volatile, and large-scale growers (50 percent of whom are absentee) in Mumias have resorted to labor contracting to secure a regular supply. Since 1981, retraction within the industry has reduced the labor demand substantially. Wages in Kenya have been regulated, but there is little doubt that conditions for wage laborers have deteriorated in real terms. Some of the Mumias workers were drawn from densely settled districts such as Maragoli, often from land-poor households. As a surplus-population location, Maragoli finds that the level of seasonal or semi-permanent migration to the sugar schemes oscillates through time in relation to the health of the sugar sector (Martin 1985). Daddieh (Volume II) shows how labor in the Ghana oil-palm sector is not subject to national wage legislation and suffers even more. As noted above, there is a severe local labor shortage in the oil-palm area (only

19 out of 140 sampled farmers hired labor), due primarily to the inability of the wage level to attract workers from outside the area or interest those within the region. Part of the recurring problem of low yields for some smallholders can be attributed to the lack of proper palm-plot maintenance.

In some cases contract farming is associated with deep segmentation of the labor market on which contractors and growers depend. The wages of the Burkina Faso migrant work force in Ivory Coast palm contracting is exceptionally low; Torp and Marcussen refer to foreign wage rates in the palm-oil sector as "abnormally low" (1980:126). Perhaps the most dramatic case of such labor-market segmentation is the Gezira scheme. It is estimated that the scheme employs 400,000 seasonal and permanent workers on the cotton harvest each year, largely hired by tenants who are contracted to produce cotton. The labor force consists of three major sources: 57,000 resident laborers, 9,000 casual laborers, and 336,000 imported from the Gezira Province and beyond (Aricanli 1984). The labor force is sharply segmented by ethnicity and gender, and wages reflect these differences. Seasonal laborers were paid 62 percent as much as the settled workers (usually Arab); within the seasonal category, "westerners" were paid only 51 percent as much as the permanent workers; and Arabs from the Two Niles (peasant-pastoralists) received 72 percent of the wages for similar work under similar conditions. According to Abdelkarum (1985), the different systems of recruitment, work experience, and housing account for the lack of collective organizing activity by migrants, and consequently result in depressed wage rates.

These sources of cheap labor (whether as foreign migrant workers, unorganized national migrants, or as women) are critical to the profitability of some of the large nucleus estates and heavily mechanized outgrower schemes. Palmer-Jones (1987) refers to the dependency of the Malawi tea sector on migrant labor from war-torn Mozambique. However, maintaining the labor supply may not be easy in the context of segmented labor markets. Ivory Coast has experienced major shortages, largely because Sahelian labor has been attracted to Gabon and Nigeria. By the same token, workers are subject to fluctuations within the sector itself--for example, sugar recession in Kenya--and rarely are workers subject either to state minimum wages or to the benefits of formal unionization. Although the outcome of on-farm employment can frequently be positive, in other situations it means that little income above household maintenance and reproductive costs is available for investment in agricultural or nonagricultural activities.

3.2 Nonfarm employment

There are two different and rather complex issues that must be addressed in attempting to estimate the nonfarm employment

generated by contracting schemes. The first issue is quite straightforward: the number of jobs directly created by the ventures in their staff and management structures. The second and much more complex issue is the indirect employment generated among the various firms created to provide inputs and supporting services to the activities included in the overall venture. The latter is much more difficult to assess and ascertain whether it is attributable to contract farming, rather than to other activities. As noted earlier in the chapter, however, the development of these secondary activities has been lacking in many contract-farming schemes.

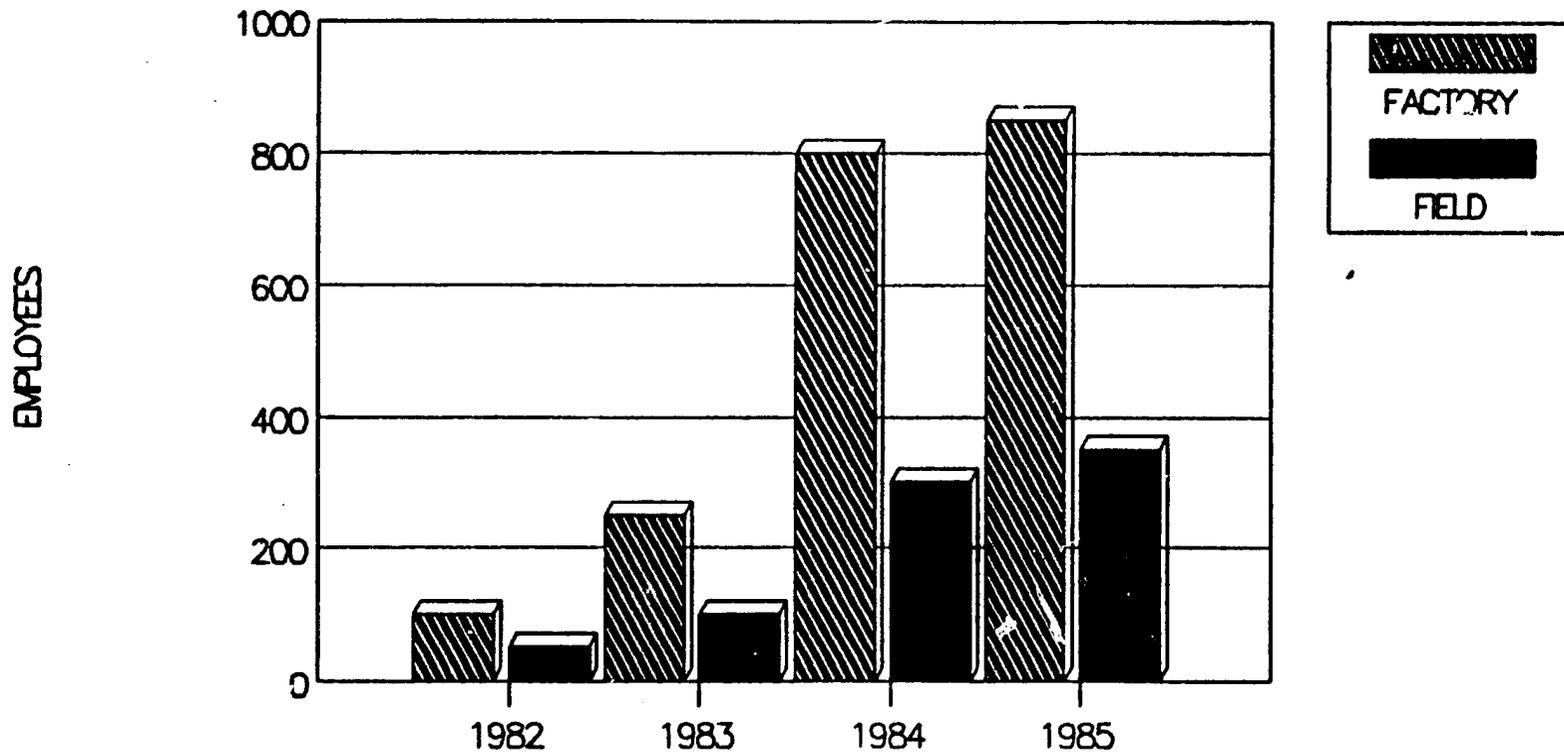
The issue of nonfarm employment linkages is closely tied to the type of commodity produced and whether or not it requires processing. With the exception of fresh vegetables for export (which only require packaging), all other commodities examined in the study required processing, usually immediately after harvest. The need to process tea, sugar, and other contracted commodities soon after harvest, and to keep transport costs to the factory low, means that processing facilities are often located near production zones. Employment figures were not available for all of the processing facilities examined in the study, but in the case of the Njoro Cannery relatively high levels of nonfarm employment were generated (although not always in the producing region). Between 1983 and 1985 employment at the Njoro cannery rose more than 200 percent (see Figure 5.2). In 1985, the cannery employed 850 people in its factory, 350 as field staff supervising the production of contracted vegetables, and approximately 2,000 smallholders to produce seed. With some 15,000 bean growers on the scheme, this equates to one nonfarm job generated for every four to five contracted producers. Again, this is a relatively favorable employment ratio, given that still more employment has obviously resulted from the increased demand for consumer goods and services that the scheme has created among farmers.

The ratio of nonfarm workers to contracted farmers also proved favorable in the sugar industry of Kenya, which entails considerable use of contracts. In the Mumias sugar scheme, approximately 3,500 permanent staff are employed in the project's 39 factories and its nucleus estate. With 20,800 contracted growers on the scheme, this equates to a ratio of approximately one nonfarm employee per six contracted growers (Buch-Hansen 1980a).

Employment data on the fresh-produce schemes highlight the significance of agroprocessing in generating nonfarm employment. For example, the SOEX horticultural exporting firm in Senegal has only 18 full-time employees to manage, sort, package, and ship produce from 600 to 700 contracted farmers (Abbott 1982:33). This works out to a ratio of one nonfarm employee per 33 to 39 contract growers, far below ratios achieved when agroprocessing

Figure 5.2

COMPANY EMPLOYMENT, NJORO CANNERS, KENYA



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EMPLOYEES

is required. While exact data on employment on the Kenyan fresh-produce schemes are not available, our impression is that the ratio of nonfarm worker-to-contract grower also is low. Data collected by the study on the Sidiki Sow French-bean export scheme (Mali) reveals a nonfarm worker-to-contract grower ratio of only 1:68. In sum, the fresh-produce contracting schemes generate significant levels of on-farm employment, but--in contrast to the processing schemes--they employ very few nonfarm workers.

Indirect employment generated by contracting schemes--through the backward and forward linkages to input suppliers, support services such as equipment and vehicle repair, and marketing and processing enterprises--is very difficult to measure. As discussed earlier in this chapter, many of the schemes were self-sufficient in terms of repair and maintenance and other service industries. On the smaller vegetable-contracting schemes, there is some reliance on local transport companies, but the employment generated by this is minimal. The literature on contract farming points to cases where schemes have stimulated the formation of various types of companies, many of which are small enterprises that employ sizable numbers of workers. Lele (1975), for example, notes the formation of numerous small firms around the Tanzanian tobacco schemes; these include companies that produce wood crates, cigarettes, and a variety of other products. BAT (British American Tobacco Company) schemes usually include tree-planting activities designed to replace the wood used in the flue curing of tobacco. Through these programs, farmers receive subsidized seedlings from the company and may eventually earn additional income from the sale of surplus wood (Karen 1985).

The Jahaly Pacharr rice scheme involved agroprocessing that was in the hands of private businessmen, rather than under the control of the scheme. This was unusual among the contract-farming schemes examined in the study. Coupled with the increased business opportunities, the growth in private milling had a positive effect on employment:

The Jahaly Pacharr project grows, markets, and stores paddy, but it does not mill it. Much of the paddy [is] sold locally . . . [and] is processed by small, motor-driven mills, which are now found in the large trading villages. Owned by local businessmen, the mills are also widely used by farm families . . . (Carney 1987:283).

In sum, the generation of employment (both on- and off-farm) associated with contracting schemes can be a positive aspect of these ventures, especially given Africa's serious employment problems.⁴ Coupled with significant generation of farm incomes, this provides the basis for very positive effects on local and regional economies. Contract farming does generate significant

demand for on-farm labor, but the degree to which non-farm employment is achieved depends on:

- (1) the presence and requirements of agro-processing;
- (2) the level of direct employment by the contracting firm; and
- (3) the extent to which the scheme allows and/or supports the formation of small enterprises, which can provide services and other materials to the scheme and its farmers.

4. Use of Local Services, Industries, and Inputs

Some contract-farming industries have stronger backward and forward linkages than others. Commercial broiler production is one such industry, where strong backward linkages--in the form of contracts with feed millers--usually exist. Poultry contract-farming enterprises in Nigeria and Egypt maintain strong backward linkages to feed millers, but this type of integration has not yet occurred in Senegal (see Billings, Volume I⁷).³ The weak integration in Senegal may be due to geographic factors that make contracting unnecessary. Integration in the poultry industry, which is usually led by feed producers, appears to occur only when (1) producers are dispersed and remote from feed producers, and (2) poultrymen are distant from buyers. In Senegal, the entire industry is concentrated in Cap Vert, poultry producers have easy access to feed suppliers, and contracts are not used.

While most contracting schemes are insulated from local service and other economic activities, there are examples of local private-sector firms providing either inputs or services to a scheme. In the case of the Njoro French-bean scheme in Kenya, the contracting firm required a variety of bean seed that was not readily available in Kenya. The choice was either to import the seed or try to procure it locally. An agreement was reached with a local seed-producing company for the latter to provide the company with the necessary seed. This seed company, in turn, contracted several dozen farmers to grow beans for seed.

The various horticultural ventures in Senegal and Kenya have also involved local service industries. An important regional impact here and in other cases has been growth in the transportation sector. For example, the Kibirigwe Irrigation Scheme (Kenya) does have its own trucks, but there has also been considerable hiring of local transport to ship produce. Market access is not a problem in this area (there is a good tarmac road connection to Nairobi) and farmers are able either to market produce in nearby Karatina or to hire transport and sell in Nairobi. The potential exists, however, for what is initially

perceived as healthy competition through the involvement of local firms, to later become detrimental to the industry.

The growth in fresh-vegetable exports from Kenya has resulted in a proliferation of contract-farming firms, some of which provide a variety of services (such as transport and storage), while others depend on small firms to provide these services. Since the early 1970s the number of licensed exporters in Kenya has mushroomed to over 100. Many of these firms are part-time exporters, handling horticultural produce in addition to other activities. Although an increase in the number of people transporting, processing, and exporting produce is an important regional multiplier effect, the future economic impact is a more problematic issue. Jaffee (1987; also see Volume II) examines what he calls the "fragmentation of trade" in the Asian-vegetable sector. He states:

Over the years many "cowboy outfits" have sprung up in search of quick profits in this trade. Their scale of operations warrants neither the investment in marketing infrastructure nor the investment in building up stable relationships with growers and overseas buyers. Most firms have neither the capacity nor the inclination to plow back earnings into the horticultural sector. Most firms have insufficient turnover to obtain an economical return on precooling and cold storage facilities or on development of their own extension staff.

The fragmentation of the trade results not only in Kenyan firms scrambling for farmer produce and air cargo space, but also competing against one another for the same markets. Fragmentation has also served to undermine the reputation of Kenya as a supplier. The quality of produce and associated services varies by exporter with small-scale, ad hoc exporters not being able to satisfy importer requirements. This undermines the overall image of the Kenyan trade and acts as a "drag" on the business of the more competent firms (1987:84-85).

These smaller firms depend on a range of companies to provide them with inputs and services.

As noted earlier in the chapter, the practice of importing all inputs and providing their own transport and machinery repair is typical of the larger contracting enterprises (see Barclay's description of the Mumias scheme quoted earlier in the chapter). For example, in the Ivorian case study of palm-oil contracting, the contracting scheme (SODEPALM) is totally self-sufficient, even to the point of constructing and maintaining its own feeder roads. On the Jahaly Pacharr scheme, except for the operation of the local, privately owned rice mills, the project has few economic linkages with regional service and other industries.

Carney notes that: "Besides rice mills, at this stage few other economic linkages exist since the project is still being managed with Dutch technical assistance, who handle all machine repairs and other infrastructural needs" (Carney 1987:53).

4.1 Procurement of agricultural inputs

Production of contracted commodities usually entail agricultural inputs that are not available locally or, in many cases, nationally. Virtually all contract farmers in the study utilized fertilizers and some used herbicides, many of which were imported from overseas. These inputs can be imported directly by the firm or purchased through a national parastatal responsible for their import. Rarely are they purchased at the local or regional levels. In some cases, part of the reason for current input procurement is that government may have a monopoly on distribution of agricultural inputs. This proved to be the case for certain contracting schemes in Ivory Coast, Kenya, and Ghana, where firms had no option but to procure inputs from government organizations. In other cases, the inputs were not available locally. The poultry industry in Senegal is an extreme case of dependency on the import of inputs. Rather than establish local sources of procurement, the Senegalese poultry industry imports nearly 2 million day-old chicks from France annually. Veterinary inputs are also imported from France to be administered directly by the poultrymen.

Although some inputs (such as fertilizers or tools) may be available locally, the contracting scheme may not utilize local sources, preferring to procure materials from their own sources. In one case--the GOPDC oil-palm scheme of Ghana--the scheme imported several materials, including wire nets and field boots, that most likely could have been procured in the region. In general, contract-farming schemes procure inputs directly from pre-existing sources rather than stimulate the creation of local or regional supply networks. As indicated above, this may be at least partially related to government controls on the distribution of agricultural inputs. This is considered more efficient in terms of cost, and the supply is more secure. Although some of these inputs may already be available on regional or national markets, contract-farming schemes often import directly. We found only one case--the Njoro scheme mentioned earlier in this section--where a contracting firm had a policy to utilize local inputs whenever possible.

5. Linkages with Regional Markets

Strong linkages between contract-farming schemes and regional market systems can be among the most effective generators of regional development. It is through regional exchanges that networks of market towns are established, which

can, in turn, service the agricultural sector. Every exchange within a region increases the amount of product value that remains in the area. Although only the initial purchase of a contracted good directly benefits the producer, subsequent exchanges can indirectly benefit him/her. Regional exchanges provide employment and profit for traders, processors, and transporters, who in turn can provide strong local demand for farm products, recirculating at least part of the benefits to the producers from regional trade. The regional multipliers can be even greater if these revenues are reinvested at the local and regional levels.⁶

Most contract-farming schemes are oriented toward export or--in the case of import-substitution schemes--national markets. There is usually only one or, at most, two exchanges in the region prior to export to national or international markets. Many of the commodities produced under contract are not in demand at the local level. When the orientation is strictly export, contract-farming schemes have few linkages to regional markets and tend to bypass the local market hierarchy entirely. Bulking of commodities is done on-scheme using scheme facilities, and they are then shipped to the point of export using scheme transportation. This is done in many of the horticultural schemes in Kenya and Senegal where produce is grown for export to Europe, and agents purchase vegetables in the morning to ship overseas that same day. The export orientation of most of the contracting schemes has meant that regional market towns and traders are not involved, and flows of contracted commodities are usually outside the existing regional market systems. Consequently, the only value that remains in the area from the transaction is the revenue earned by the producer from the initial sale.

Contracted commodities that are produced under import-substitution schemes may eventually appear on the regional market, but only after being exported out of the region. In most cases, the import-substitution commodities are processed and shipped to a national bulking/distribution center, and then local wholesalers must reimport them. This is the case for sugar and tobacco in Kenya, as well as for oil-palm products in Ivory Coast. When this occurs, the value added accruing from intermediate exchanges is lost to the regional economy.

Contracted commodities with regional and local demand raise special problems of "leakage" for contracting firms. The leakage of produce to local markets can be of such concern that contractors police their outgrowers and demand elaborate contracts prohibiting sales outside contracted channels. Access to alternative regional and local markets provide producers with some leverage over contracting firms. For example, in addition to the prospect for a regular monthly income throughout the year, many oil-palm planters in Ghana and Ivory Coast stated that they

were attracted to palm production because of the existence of an alternative market should the state offer unattractive prices (Daddieh 1987:40). Rice producers in The Gambia also sold a considerable portion of their crop on informal markets. This proved to be a problem even for certain vegetable schemes in Kenya. Jaffee (Volume II) reports that KHE provided large quantities of chola seed (a type of pigeon pea) hoping to increase production, but found that farmers were eating much of the crop or selling it locally. Opportunistic market behavior is considerably more prevalent when contracted producers are growing crops that can be sold on regional markets.

6. Investment in Infrastructure

Case studies included in this study do not indicate that (private) agribusinesses make important investments in infrastructure to support their schemes--at least in Africa. For example, private firms may occasionally construct collection centers in rural areas, but frequently they simply lease existing structures to serve as collection points. Rarely do the smaller-scale, private-enterprise schemes (particularly horticultural exports) provide more than the basic requirements for farmers to grow the crop correctly. The perishability of fresh-vegetable crops necessitates quick, easy access between the farmer, the sorting/packing location, and the export point. The firms contracting for these products in Kenya and Senegal are far too small to build roads, airports, etc., and thus they tend to develop in areas with good existing infrastructure. In the case of Cap Vert in Senegal, for example--where several contract-vegetable schemes are located--investors have taken advantage of basic irrigation systems, roads, and market facilities already in place.

Infrastructural investments occur more frequently on government-led contract-farming schemes. In the oil-palm plantations in Ghana and Ivory Coast, and the Jahaly Pacharr scheme in The Gambia, infrastructure investments have included feeder roads, market centers, schools, and clinics--in addition to processing plants and facilities necessary to deliver inputs to contract producers. In the Gambian case, infrastructure includes a substantial water-management system. Another publicly supported project, tea in Malawi, has made some limited investment in local feeder roads. Both the KTDA and Mumias schemes have involved extensive infrastructural development, especially of feeder roads. These investments in infrastructure also allow noncontract producers better access to services and markets in the region.

Where production-related infrastructure is required, such as feeder roads, or perhaps electrical power or water, a private investor may be able to coax public infrastructure investment as

a form of government quid for the private pro quo in a preinvestment package agreement. This is demonstrated by the two oil-palm projects in Ghana, where the government of Ghana is working with private foreign partners. In one case transnational corporations, international development agencies, and the government of Ghana are collaborating to establish the Twifo Oil Palm Plantations (TOPP) Limited. When completed (anticipated in 1989), the complex will include a 4,800-ha nucleus estate, 300 smallholders cultivating 1,500 ha, and a 20-ton-per-hour mill. Although suffering from numerous delays, TOPP aspires to provide a complete system of productive and social infrastructure, including the integral involvement of a functioning smallholder association and an incentive policy that will deliver one-third of the palm oil to smallholders at wholesale prices (Daddieh 1987:31).

7. Regional Incomes

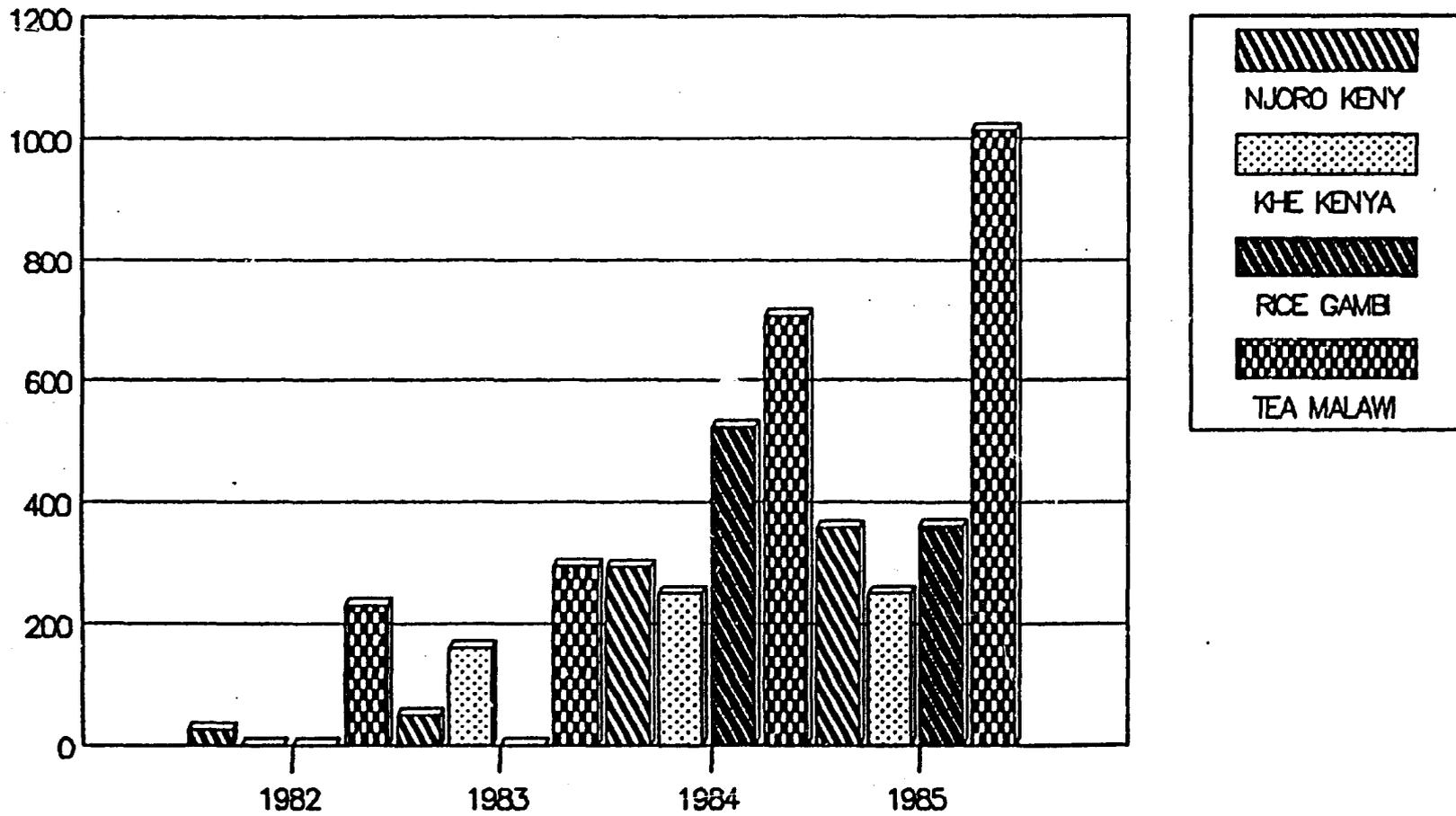
Regional income analysis is only possible in a small number of schemes where data are available. In most cases, no more than 25 to 30 percent of total revenue generated from the schemes remains in the producing region. It is estimated that from sales of \$2.45 million by Njoro Cannery in 1985, only \$600,000 remained in the region in payments to farmers (\$359,000) and employees (\$241,000)--less than 25 percent of the total revenue. Data on the Mumias Sugar Scheme is more detailed, and also shows that only about 27 percent of the total revenue generated from the scheme is retained in the local area (Buch-Hansen 1980a:61). As noted earlier, only minimal local multipliers result from the high salaries paid to expatriate managers or from the inputs and transport services hired by the scheme. It should be noted that the Mumias scheme expends almost as much on transport and agricultural inputs (approximately Ksh 30 million in 1980--US \$4.6 million) as it pays to its outgrowers. These services and inputs are not purchased locally.

Difficulties were experienced in gathering data on firm revenues and profits, especially those privately owned. In the absence of other data, figures on regional farmer incomes are a good indicator of regional income. As indicated earlier, the main income generated to the regional economy is in the form of farmer payouts from the scheme. Schemes producing for the fresh-produce export market retain a higher percentage of the total revenue in the region, but result in lower regional incomes. They generate sizable incomes for a few farmers, but their aggregate contribution to regional income is less than for the larger schemes. Some of the Senegalese horticultural schemes, for example, involve fewer than 40 participants; and the KHE scheme in Kenya has only 500 growers. They involve a very small percentage of the regional farmer population (see Table 5.1). Figure 5.3 demonstrates the contribution that different schemes

FIGURE 5.3

REGIONAL FARMER INCOME FROM FOUR CONTRACT FARMING SCHEMES

122
(SUS) THOUSAND



Sources: Carney (1987); Jaffee (1987); Palmer-Jones (1987)

make to regional farmer incomes. It shows that the larger schemes, such as Jahaly Pacharr (rice, The Gambia) and Malawi Smallholder Tea Authority, generate higher regional incomes, even though net farmer incomes are lower than on the smaller schemes (cf. Figure 4.1).

8. Summary of Impact on Regional Development

On the whole, the effect of contract experience upon regional development is a checkered one. Taken alone, the contract is an effective means for a processor or dealer to obtain some commodity supplies when a number of conditions are satisfied. These conditions include the inherent nature of the commodity--perishability, quality, and other commodity characteristics--and, very importantly, the presence or absence of alternative local markets. Government can facilitate the multiplier effects of contract farming when it is used as a component in a wider regional-development or settlement scheme, by such means as making investments in infrastructure. While contract-farming schemes generate considerable incomes for growers, the organization and enclave nature of the enterprises often limit their regional impacts.

While many private contracting schemes are located in central areas that are better served by roads and communication systems (see Senegal cases by Billings and Horton in Volume II), other schemes are developed in more remote, underdeveloped regions. In Kenya, for example, there are numerous cases of vegetable production under contract taking place in remote, yet ecologically suitable areas. Vegetables are grown for seed in underdeveloped locations, such as Vihiga and Busia in Western Province and Lotokitok near the Tanzanian border. Commodities are produced under contract in remote regions of Ghana and The Gambia. In these areas, investment associated with contracting schemes may be the main (or only) source of nonfarm employment, the major source of demand for nonfarm goods and services, and the only activity contributing to regional income.

Endnotes

1. The authors acknowledge and appreciate the assistance of Curt Grimm in preparing this chapter.

2. In terms of regional economic multipliers, a comparison between plantations and contract-farming schemes is appropriate in some cases (cf. Dinham and Hines 1984). The difference between the two is that smallholder incomes can be generated on contract-farming schemes, while large landowners usually reap the bulk of the income in plantation-based economies. Income expenditures by smallholders--as opposed to those by large landowners--are likely to be oriented to locally produced goods and services, and thus have greater potential for generating economic multipliers at local and regional levels.

3. In central Kenya, for example, rice growers on the Mwea scheme complain that labor costs have risen dramatically due to the introduction of contract farming of vegetables in the area. At certain times of the year, wage laborers can earn up to Ksh 50 per day picking green beans, which is more than double the wage rate paid by rice farmers. Consequently, rice farmers are facing difficulties recruiting adequate labor. It should be noted that Mwea growers produce the largest percentage of the country's total rice production.

4. In studies of contract farming, more attention should be given to conditions and incomes of hired laborers, since their employment is seen as one of the major benefits of contract farming. Our limited data on conditions of farm workers showed that their incomes were low--often below levels needed to meet basic living expenses. They were, however, probably no lower than agricultural wages on noncontract schemes in the countries under study.

5. Exceptions to this in Senegal are an integrated supply and retail chain operated by a Lebanese family (Filfili) and a ship supply chandlery, Demel, which provides poultry products on contract to the Russian South Atlantic fishing fleet based in Dakar.

6. The theme of regional markets and income multipliers is explored in other SARSA work. See, for example, SARSA's work on Somalia (Evans et al. 1987).

CHAPTER VI

AGRIBUSINESS MANAGEMENT, PRIVATE FIRMS, AND GOVERNMENT INSTITUTIONS

1. Introduction

This chapter focuses on the perspective of the firms and other institutions that have structured and managed contract-farming operations in numerous African countries. It examines the types of organizations that have participated in these operations, their motivations for participation, and the different types of roles executed by these organizations. The analysis also outlines the key decisions concerning the initial structuring of contract-farming schemes, the organization of agricultural-production activities, and the management structures of the contracting organizations. The operational problems of a variety of contract-farming schemes are then reviewed, as well as the financial impact of these schemes. Based on these materials, an assessment is made of the management performance of the firms and organizations that have designed and implemented contracting operations, and the critical management issues that led to the success or failure of the various schemes under examination.

2. Contracting Firms and Institutions

2.1. The variety of types of contractors

Contrary to our initial expectations, researchers for this study found that contract farming is not only extremely widespread throughout Africa, but that the contracting organizations are owned and managed by a variety of different types of firms and institutions. These include private local companies of various sizes, expatriate companies of various sizes, government ministries and parastatals, and bilateral and multilateral donors. While our research in Africa did not identify a case of private voluntary organizations (PVOs) serving in the contracting role, our research in LDCs in other regions of the world suggest that PVOs are most likely performing this function in various African countries as well.

The study finds the experience of private, public, and hybrid contract-farming schemes to be very mixed in terms of performance. Simply in terms of project efficiency and development impact there are cases of success and failure for each type of ownership/management structure. The evidence does not definitively indicate that privately owned and managed schemes have a higher financial success rate or that they have

had more consistently positive developmental impacts. Rather than ownership being the key determinant of the success and sustainability of projects, it is the quality of management and technical support, the availability of capital, and the presence of favorable market conditions that seem to set apart successful from unsuccessful schemes.

Our case studies reveal that most large contract-farming schemes involve government in some capacity, while the smaller schemes are predominantly carried out by private organizations. By far the most prevalent form of contracting is performed by private local firms acting alone, with little or no assistance from local government or financial institutions. While our research did not permit a definitive assessment of the magnitude of this form of contracting except in the case of Kenya (see Jaffee, Volume II), an appraisal of contracting ventures in four West African countries (Cameroon, Ivory Coast, Senegal, and Mali) indicates that in each country except Mali contracting by private local firms is extremely widespread and the number of these schemes greatly exceeds the number owned and/or managed by expatriate private firms, or local or international public institutions (Mock 1986). (In Mali private local contracting ventures were also identified, but the brief research time did not permit an estimate of the magnitude of this form of contracting vis-à-vis other forms). The same holds true for Kenya.

All other forms of contractual arrangements researched for this study involve joint collaborative ventures that include participation by several different types of private and/or public institutions. Many of these ventures include the participation of local government agencies collaborating with various combinations of donors, expatriate firms, and/or local private firms. Some, however, are owned and managed as joint ventures between local private and expatriate firms, while a few involve donor assistance to local private enterprises, generally channeled through local public or private financial institutions.

The contracting schemes examined during this study obviously represent a small sampling of such ventures throughout Africa. There may be some cases of local government agencies or parastatals acting as the sole owner/manager of contracting schemes without donor or other external assistance; however, none were reviewed during this study.¹

Table 6.1 includes a listing of the firms examined most intensively during this study (both in the field and from literature), as well as the financial, management, and technical functions of the various participants in the schemes. The institutional structure of ownership/management/support reflected in this sampling is as follows:

<u>Venture Ownership/Management/Support</u>	<u>No. of Cases Examined</u>
Private local firm	13
Private local firm with expatriate firm	6
Private local firm with donor	1
Private local firm with government agency	2
Expatriate firm with government agency	8
Government agency with donor	12
Government agency with donor and expatriate firm	10
Government agency with local private firm and expatriate firm	3
Government agency with local private firm, expatriate firm, and donor	2
Government agency with local private firm and donor	1

2.2. The scale of the private local and expatriate firms

The size of the private local firms involved in smallholder contracting ventures varies considerably. Most are classified as small enterprises (with fewer than fifty employees), and many are within the size classification "very small" (fewer than ten employees). For example, the Sidiki Sow firm in Mali employs a staff of ten people to manage a French-bean export scheme that includes 682 small farmer contractors. OCAF, a Kenyan sunflower-seed production scheme with AID financing (administered by the Kenya Commercial Finance Company), includes a staff of eight to manage 3,000 contracts. Most of the remaining private local firms may be classified as "medium scale" (50-100 employees, or 50-150, in the higher-income African countries), although one of the firms studied is a major company by international standards (the Haggard Group in Sudan, a diversified company with contracted tobacco and coffee production, which has an annual turnover of approximately \$81 million) (Karen 1985).

As with the private local firms, the size of the expatriate firms involved in contracting schemes varies considerably. Most are considerably larger than the local companies; some, such as British American Tobacco, which has tobacco operations in twelve African countries, are major international companies. Other large expatriate firms that have participated in the ventures examined in this study include Unilever, Booker Agriculture International, Michelin, Cadbury, The McCormick Spice Company, Mobil, and Compagnie Française pour le Développement des Fibres et Textiles (CFDT). However, some of the expatriate firms that have participated in the ventures under consideration may be classified as small or very small companies; although little precise data are available concerning the exact size of most of the expatriate partners or investors, some are essentially individuals who serve as marketing agents, managers, or very minor equity holders. This is particularly true for the

SCHEMES WITH MORE THAN 5,000 FARMERS

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
KDTA	Kenya: Tea	150,414	Parastatal; Organizer; Gradual assumption of management; infrastructure.	Loans from CDC, IDA, OPEC Fund, Germany, European Investment Bank; Accountant, TA from CDC.		British tea companies initially manage some factories and perform marketing.
Mumias	Kenya: Sugar	27,400 (provide 88% company requirements).	GOK equity 17% KCFC equity 5%	CDC equity 17% East African Dvt. Bank equity 3%		Booker Ag. Int'l equity 4%; manage factory and grow- ers; technical training (gradual assumption of mgt. by Kenyans).
Njoro Canneries	Kenya: French Beans	16,000 (70% women)			Factory owned by local firm; local finance provided for factory expansion.	Initiated by French firm; sought local partner. Pro- vided TA to re- model factory, tory, raw material pro- duction, market- ing. Guaranteed local partner minimum ROI on factory operations.

Institutional Dimensions
of Contract-Farming
Schemes

Table 6.1

Schemes with more than 5,000 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
BAT/Kenya	Kenya: Tobacco	10,000	(GOK - 20% equity)		BAT/Kenya (local subsidiary of BAT) manage (20% equity held by "Kenyan Public").	BAT parent company - 60% equity.
CFDT	Mali: Cotton	72,000	Parastatal; gradual assumption of management from CFDT. Malian Director.	European Private Fund Grant for trucks, price support, input subsidies. FAC funding for personnel, storage.		CFDT (France) Management ini- tially, subsequent advisory admin- istrative role.
Operation Haute Vallée	Mali: Seed multiplication cotton, cereals	5,000- 6,000 (cotton) 531 (seeds)	Government development project	AID funding. TA in agricultural plan- ning, financial mgt. institution building	Hope to privatize (with AID support, TA)	
Nigerian Tobacco Company	Nigeria: Tobacco	7,000				Initiated by BAT; BAT funding, management. Later Barclay's Bank assumed credit functions.
SEMRY	Cameroon: Rice	22,000- 25,000	Govt. Develop- ment program.	Unclear. AID seed project.		

Schemes with more than 5,000 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
CAMDEV and HEVECAM	Cameroon: Oil palm	Several thousand in each scheme.	Govt. Develop- ment Corps (act as channel for IBRD financing).	IBRD and CDC financing, possible TA.		
SCT	Cameroon: Tobacco	7,000	67% state ownership			33% French ownership.
SODEFITEX	Senegal: Cotton, food crops	82,575 (1982) 74,609 (1986)	100% owned by parastatal	Funding from IBRD, FAO, FED, Saudis. Possible technical/mgt. support.		CFDT?
SODAGRI	Senegal: Rice, other cereals.	13,796	State enterprise.	Funding from Saudis, Swiss, Islamic Dev. Fund, African Dev. Fund. Requested AID loan for revolving credit fund; not granted.		

Schemes with more than 5,000 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SOFITEX	Burkina Faso: Cotton	105,000	Parastatal; 63% Government equity	Financing by Canadians, Swiss, African Devt. Fund, IBRD, FAC, CCCE.		37% CFDI equity. Technical support, receives commis- on exports.
Palminindustrie	Cote d'Ivoire Palm Oil, copra	8,582	GOCI - 22% initial capital; 100% presently	IBRD - 20% funding TA (5 projects). European Dvt. Fund - 31% funding.	Ivoirian Banks - 10% capital.	European Banks - 17% capital. For- merly Blohorn Uni- lever participa- tion (exact role unclear).

SCHEMES WITH 1,000 999 FARMERS

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
OCAF	Kenya: Sunflower	3,000- 3,700		AID funding	Administered through KCFC.	(Subsidiary of Unilever-own mill market.)
Pan African Produce Dvt. Company/Pan African Foods	Kenya: Dehydrated vegetables	3,000 also includes estate and largeholder production	GOV sponsor initial scheme. Then purchase failed project, rename scheme. Subsidized and managed. Govt. extension support.		Initially local private scheme until failure.	British firm as shareholder, sponsor. After reorganization, capital provided by European firms; German firm provides TA, production plan- ning, marketing support.
Fruitema	Mali: Beans, peppers	2000- 3000	50% equity previously; 33% now.	?	25% equity previously; 42% now. Privatizing.	French equity 25%.
SIDCA- TOLL	Senegal: Horti- culture	(Initially estate; change to CF). 2,520			Owned by local firm. Manages many operations.	Export manager; provided marketing link. Export firm coordinates, guar- antees market.
SEFAM	Senegal: Horti- culture	2,500			Local family with unrelated businesses estab- lish, manage.	

Schemes with 1,000 to 4,999 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
Tumbi/ BRT	Tanzania: Tobacco	4,600	Management transferred to local public agency after successful establishment of scheme.			British-American Tobacco manage- ment initially.
Decoris	Liberia: Oil Palm	2500 (projected)	Certain govt. support; parastatal?	IBRD funding.		
STA	Malawi: Tea	4,815	Parastatal	CDC loans, tech- nical support. UK funding for salaries, roads.		
Haggar	Sudan: Coffee, tea tobacco.	2,600 (7,000 projected)				100% ownership and management by large local private firm. (Limited equity held by employees)

Schemes with 1,000 to 4,999 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
Jahaly Pacharr	The Gambia: Rice	3,000	100% owned and operated by GOG.	Loans from IFAD, African Dvt. Bank, World Food Program, Governments of Netherlands and Germany, Dutch Technical Assis- tance.		
BOPP	Ghana: Oil palm	Plan 3,000 not imple- mented. Rely on estate and deliveries from private plantations and local peasants.	Joint venture partner GOG.			Joint Venture Partner-United Africa Co. UAC management.

SCHEMES WITH 250 TO 999 FARMERS

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
KHE	Kenya: Asian vegetables	500 (initiated contact with local firm)				Initiated by local farmers; ownership and mgt. by partnership of 2 local families; one family member moved to UK to perform importing.
Sidiki Som	Mali: Vegetables and fruits	682 (French beans)	(uses government extension service to supplement firm's own extension support)			Small private entrepreneur. 100% ownership, management.
Zaria	Nigeria: Tomato paste	960	GON top management; provide extension services.	FAO advisor.		Cadbury investment, technical and administrative support; responsible for actual management.
SOCAPALM	Cameroon: Oil palm	500 (projected) + nucleus estate	100% Parastatal ownership of estate, mill. Public Rural private corp. manages outgrowers.	IBRD financing for foreign costs, (74% of of total); FED to fund some of outgrowers		

Schemes with 250 to 999 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SENPRIM	Senegal: Horticulture	650 (after dis- solution of Bud/Senegal)	Govt. corporation under Ministry of Rural Dvt; Govt. assumed ownership from Bud/Senegal; Manage plan to privatize.	AID advising of privatization (possible funding?)		Farmers and staff trained by Bud Senegal; Bud tech- nicians remain after transfer to GOS to provide TA.
Jardina	Senegal: Horti- culture	62 supervisors over 620 farmers.			Diversified family enterprise.	
ESTPV	Senegal: Herbal Tea	335-435 (collection of wild crops).		None at present.	100% private.	
Ets. Thierno Drame	Senegal: Horti- culture	approx. 250			100% private.	Sold by previous French owner to Senegalese employ- ee; established and operated by French owner be- fore sale.

Schemes with 250 to 999 farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SAPH	Cote d' Ivoire: Rubber	500+	60% equity.	IBRD funding, training, TA.	2% equity	38% equity.
GOPDC	Ghana: Oil palm	320 (1130 projected), with nucleus estate	JCG Corporation	IBRD financial support.		
TOPP	Ghana: Oil palm	300 nucleus?	Central Regional Dvt. Corp. -85% equity. Manager.	EEC loan; CDC and two finan- cial institu- tions fund mill.		12% equity; Mobil and two British companies. Mgt support from Bri- tish mgt. company under contract to contract to EEC.
Vuvulane Farms	Swaziland: Sugar	263 fam- ilies pro- vide 12-15% raw materials.	Swazi Nation is parent company - 50% equity.	Established with with CDC funds, funds, mgt. aid.	Presently private.	
Kaleya Small Holders Scheme	Zambia: Sugar	300 (projected)	Owned, operated by Govt. of Zambia.	CDC technical and administrative aid.		

SCHEMES WITH FEWER THAN 250 FARMERS

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SOCAM	Mali: Tomato paste, fruit juices, purées, and syrups.	50 (tomatoes) If obtain additional funding, hope to increase to 1000.	90% equity	FAO financing. Request funds from UN, FED, IBRD, Japanese.		10% equity
Ets. Moussa N° Doye	Senegal: Vegetables	30			100% ownership management. Also produces some commodities not on contract.	
SAAF	Senegal: Horti- culture	7 contractors 60% small; 40% spot market purchases.			Mostly private.	European importer holds some shares; European broker established mar- keting contacts.
Senimex	Senegal: Horti- culture	One contractor; also open market purchases.			Small private company.	

SCHEMES WITH UNKNOWN NUMBER OF FARMERS

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SODECOTON	Cameroon: Cotton, food crops	NA (Estimated over 5,000)	Parastatal; 70% govt. ownership.			CFDT - 30% equity. Responsible for mgt, TA.
SNTI	Senegal: Tomato Paste	NA	Govt. provides TA.		100% private equity (had state capital, sold out).	
SAFINA (Filifili)	Senegal: Horti- culture	60% volume from small; 17% from large; 23% from estate.	4 - experimental		Organized, operated, and managed by local firm.	
SOEX	Senegal: Horti- culture	40% volume small CF; (50- 100?) 20% large farmers; 40% open mar- ket purchases.			100% local private.	
MAVOCI	Burkina Faso: Cigarettes	NA			15% equity	85% French equity; management assis- tance, TA

Schemes with unknown number of farmers (continued)

Scheme	Country: Product	No. of Smallholders Contracted	Role of Local Public Agency	Role of Donor	Role of Local Private Firm	Role of Expatriate Firm
SOGB	Cote d'Ivoire: Rubber	Small- holders on 200 ha.	95% equity.	IBRD funding.		5% equity- Michelin.
CIDT	Cote d'Ivoire: Cotton, Food Crops	NA	Parastatal, "Mixed society" under Ministry of Agriculture.			Unclear if CFDT partici- pation, now or formerly.
140 SODEPALM	Cote d'Ivoire Food crops	NA	Govt. project under Ministry of Rural Dvt. Bank lends to farmer co-ops.	?	Privatized rice milling operations included (formerly were govt. owned and operated.	
CotonChad	Chad: Cotton	NA	Parastatal			French funding and management aid.
McCormick Spices/ Uganda	Uganda: Vanilla	NA				McCormick (US) with Mitchell Cotts (UK).

expatriate participants in the Senegalese and Kenyan horticultural-export companies, including several with European marketing and financial participation (see Horton, Volume II).

2.3. The scale of the contracted operations

As Table 6.1 demonstrates, the scale of contracting varies widely among and between the different types of contractor structures. As might be expected, the smallest schemes reviewed in this study are those operated by private local companies functioning independently. Two of the Senegalese horticultural-export companies have fewer than five small-farmer contractors. This contracted production is supplemented by open market purchases, large farmer contracts, and, in one case (SAFINA/Filifili) their own estate production. Several of the other horticultural firms contract with fewer than 100 farmers. However, many of the local private schemes are quite large. For example, one of the Senegalese horticultural export firms contract 2,500 farmers, and the Haggard Group (Sudan) presently contracts 2,600 farmers in their tobacco operations, and plans to expand this number to 7,000 in the near future.

The largest schemes examined are implemented as joint collaborative ventures between local government agencies, donors, and expatriate firms. These include the KTDA tea operations in Kenya (150,414 farmers), SOTOCO cotton activities in Togo (111,002 farmers in 1987), and the SOFITEX cotton operations in Burkina Faso (105,000 farmers).

2.4. Management contracting

Often arising from a corporate base of agroindustrial knowledge, investors and management consultants may put together entire agroindustrial ventures and manage them under contract. CDC has historically been especially active, as an investor in contract-farming schemes and in a managerial role. Two transnational enterprises--Booker Agricultural International Limited, and Tate and Lyle Technical Services Ltd.--have been especially active in providing management services to large contract-farming schemes. Booker is a division of IBEC and, in the case of the Mumias sugar-outgrower scheme in Kenya, has carried the full responsibility for technical and managerial functions (from agronomic research to mill design and construction to training and management). Similarly, Tate and Lyle has provided technical and management consultancies to some of the Swazi sugar schemes.

2.5. The particular roles of the different types of participants

2.5.1. Private local firms

The private local firms reviewed during this study have, if functioning independently, restricted themselves to simple technological operations involving a minimum of processing.² This is apparently due largely to the lack of financing (particularly investment capital or medium-term credit) for more complex processing facilities, lack of information about processing technologies and the markets for processed products, uncertainty about their ability to manage and technically support a more complex processing operation, and in certain cases, lack of short-term working capital to finance the scale of contracting required to support a processing facility. For example, a major activity of private local firms involved in contracting in the countries examined is the export of fresh fruits and vegetables; the processing of these products involves only simple grading, cleaning, treatment, and packing. While some of the entrepreneurs interviewed have identified more interesting possibilities involving the canning of these products, or the production of fruit juices, purees, or jams, they reported that they are constrained by the necessary financing required and by their lack of information about processing technologies, especially small-scale technologies. The ESTPV company in Senegal, an herbal tea operation, offers an example of such constraints. The company contracts 435 farmers to collect wild herbs, and then performs simple drying and cleaning activities before exporting the herbs to France, where they are processed into tea bags and packaged. The packaged products are then imported back into Senegal for local sale, or exported from France to various European, African and Middle Eastern countries, including Saudi Arabia. The company is currently unable to perform the processing and packaging itself in Senegal because of a lack of investment capital or medium-term credit financing to purchase the necessary equipment. (Notably, the manager has already researched equipment availability, and has selected the Brazilian equipment that he hopes to purchase, if funding can be obtained).

Private, local firms in Senegal seemed to have learned from the Bud Senegal experience, which confronted several social and political problems. The Bud Senegal venture proved that there was a market for Senegalese products; subsequently a number of small private firms were formed to capitalize on this established market, or already existing firms diversified into horticultural activities. Further, when the Bud Senegal operation, which was renamed Senprim when it was subsequently taken over by the government, initiated contracting activities with local smallholders, this proved to be a forceful demonstration model that the small local firms began to replicate in their own

activities. Apparently some of the firms were able to establish contracts with agriculturalists who had formerly worked on the Bud Senegal operation. Thus they were able to benefit from the trained pool of farmers experienced in horticultural crop production (Horton, Volume II). Some companies also hired former staff members of the Bud Senegal company, thereby benefiting from the training and experience that they had received while working for the Bud operation. Finally, apparently some private farmers on the perimeter of the Bud Senegal/Senprim scheme have begun copying the model by initiating small contracting schemes of their own with other small farmers.

In summary, our analysis of the Senegal horticultural sector suggests that one extremely powerful role that can be played by private local firms is to replicate successful models and disseminate technologies already proven by other institutional structures (also see discussion in Chapter VII). Most lack the means to identify and develop new technologies and markets and can only utilize simple processing technologies. Support structures to assist in new product/market development through the provision of market information and contacts, financing, and information on appropriate technologies are not readily available in most African countries.

As the case of the Haggard Group in the Sudan indicates, however, there are some dramatic exceptions to these patterns. The largest local private companies are able to undertake much more complex processing operations, and have the independent means to identify appropriate technologies and new local or foreign markets. They also often have greater access to the limited commercial or government-supported financing that is available, thereby amplifying their ability to undertake innovative new activities.

2.5.2. Transnational and expatriate companies

Expatriate companies involved in joint ventures with local private companies play a variety of different roles, depending on the size and complexity of their operations, local experience with the commodities and processing involved, and the time horizon implied by the degree of investment required for the operation. The role of expatriate firms also differs according to government policy on foreign investment. Roles of expatriate firms may include the following: (1) management advisor, or sometimes the assumption of management responsibilities, particularly in processing operations and sometimes in the commodity-procurement activities; (2) technical advisor, usually in processing, but often also in agricultural production; (3) marketing manager, mainly for export operations; this includes the identification of export markets, the establishment of market contacts, and the management of all overseas marketing activities; (4) the training of farmers when new crops are

introduced; (5) in the larger operations, the training of staff and extension workers; and (6) financial-equity investing, in the case of commodities requiring only limited processing and little investment, as well as unstable markets with easy entry and exit, as in the Senegalese horticultural sector, expatriate equity holdings are generally very minor. However, in projects with larger required investments and more stable markets (sometimes even local monopolies guaranteed by local governments), the expatriate firms may take a major equity position, as in the MAVOCI tobacco operation in Burkina Faso, where a French firm holds 85 percent of the equity, and a local private company holds 15 percent.

In the ventures involving costly processing facilities and the training of farmers in new production methods, such as the MAVOCI and BAT tobacco schemes, the expatriate companies not only take a major equity position, but they generally manage the processing and agricultural production operations as well. However, in the smaller schemes involving less complex processing activities and commodities with which farmers are already familiar, as in the SAAF and Sidca Toll horticultural-export ventures in Senegal, the expatriate partners play mainly the role of overseas marketing manager, and rely on the local partner to manage the procurement, processing, and exporting activities. In these cases the two partners bring different types of expertise to the venture; many of the expatriate partners are essentially trading companies, while the local partners become experts in the other in-country activities involved in the enterprise. In the horticultural-export operations, the expatriate partners generally take only a very minor equity position, if any. Since these ventures presently involve saturated, competitive, unstable markets, the expatriate partners generally prefer more flexible relationships that can be easily terminated, and thus may avoid significant financial participation. The smaller expatriate partners may also lack the resources to provide anything other than overseas marketing support.

When complex processing is involved, the expatriate firms are generally responsible for plant construction as well as its subsequent management. However, this is not always the case, as the Njoro vegetable canning operation suggests. In this case, a major French canning company, Saupiquet, went to Kenya not only for commodity-procurement purposes, but also sought out a local partner that could perform in-country canning of the commodities. A deal was structured with a local canning company whereby the expatriate partner was to provide technical assistance in the remodeling of the factory and factory management, as well as the initiation of contract-farming operations and the overseas marketing of the factory's output. Subsequently a contract-farming scheme was established that involved 16,000 farmers, 70 percent of whom are women, producing French beans for the local canning factory.

In the cases of joint ventures between expatriate firms and local government agencies, most involve majority ownership by the government agencies, and substantial but minority participation by the expatriate firms. In fact, many of these schemes were indeed initiated by the local governments in an attempt to generate export earnings, create employment opportunities, or to reduce import expenditures; in some cases, such as the Zaria tomato-paste venture in Nigeria, the expatriate firm is "invited" or persuaded to participate, and is given various assurances, such as control of the internal market, subsidies, or tax holidays, as an incentive for their participation. The SOFITEX cotton scheme in Burkina Faso includes 37 percent equity participation by CFDT and 63 percent ownership by the government; Fruitema, a Malian fruit- and vegetable-exporting and processing company, initially had 25 percent French equity participation and 50 percent government ownership, with the remaining equity held by the Malian private sector (the government has since reduced its equity to 33 percent and is in the process of further privatization); and the SCT tobacco scheme in Cameroon includes 33 percent French ownership, with the remaining 67 percent held by the government. In the BAT schemes, however, the company often takes a majority equity position, as in BAT/Kenya, where BAT assumed 60 percent ownership and the government, 20 percent, with the remaining equity held by the Kenyan public. In these government-expatriate firm joint ventures, the main role played by the expatriate company is to provide top management direction, technical support, and, for export ventures, marketing expertise. Although most of the staff positions, including often the directorship, are held by local employees, the expatriate firm generally plays a strong management and technical advisory role.

In the ventures involving donor support with government and expatriate firm participation, the equity position of the expatriate company is sometimes even smaller--Booker McConnell held only four percent of the equity of the Mumias sugar operation in Kenya; Michelin holds five percent of the equity in SOGB, the Ivoirian rubber scheme; and Mobil and two British companies held 12 percent of the equity in TOPP, the Ghanaian oil palm venture (see Daddieh, Volume II). CFDT apparently played only a management role in CMDT, the Malian cotton parastatal supported by grants from the European Development Fund and the French aid organization, FAC.

The most vital role of the expatriate companies in these situations, where substantial funding is provided by both government agencies and donors, is to provide management and technical direction, support, and training; services that may be performed under a contract arrangement without any ownership involvement.

Many of the joint ventures between expatriate firms and government agencies involve relatively complex processing operations, such as the milling of palm oil, the ginning of cotton, or the production of cigarettes. In these cases the expatriate management/technical role is absolutely vital, particularly in the early stages of the projects, as government and parastatal employees are trained in factory management and in the management of agricultural production/processing systems.

2.5.3. Government agencies and parastatals

Almost exclusively, contracting ventures that include government involvement also include some sort of donor or expatriate company participation or support (for example, see Volume II for Carney's report on the Jahaly Pacharr rice scheme in The Gambia). Our research identified only a few cases of projects being operated by government agencies acting alone-- these were all cases of projects that had been initiated by private local or expatriate companies and had experienced difficulties, such as the Urambo tobacco scheme in Tanzania and the vegetable-dehydration scheme in Kenya (Jaffee, Volume II), or cases that had been partially successful, such as the case of Senprim, the Senegalese horticultural-export operation initiated by Bud Antle/Bud Senegal, whose ownership and management was subsequently assumed by the government.

In many cases, the government-sponsored schemes were initiated by the governments, with macroeconomic, social, and political objectives as the motivating reasons (see Daddieh's case studies on Ghana and Ivory Coast and Carney's case study on The Gambia in Volume II). As noted above, the aims of most of these schemes are to create economic opportunities for small farmers, or to initiate new import-substituting or export-generating industries. However, in almost all cases, the schemes are intended to be commercially viable, usually after a several-year start-up period with subsidized donor loans or grants, or other donor support (discussed further in Chapter V).

Aside from their role as initiator and organizer of these joint-venture projects, as well as their role as financial participant, the main roles of government agencies are as follows: (1) to provide most of the staffing for the projects; (2) to provide certain infrastructure in project areas; (3) to provide support for or independently conduct background agricultural research; and (4) to provide political and policy support (especially in the areas of foreign trade, export taxation, and producer and consumer prices), as well as possibly certain concessions and subsidies, particularly in the early project years. To expatriate firms, government involvement may be viewed as extremely attractive, since it is taken as a symbol of commitment to protect the project from negative government actions and policies. However, to some expatriate companies,

government participation in management may be seen as unnecessarily cumbersome and restricting. In many cases where government officials are involved in management, the eventual goal is for the private sector to gradually assume full management responsibilities; the role of the expatriate firm or donor is to assist the agency to accomplish this goal.

For some private schemes, government agencies have provided useful indirect support through assistance in extension activities and other technical aid. For example, the Malian French-bean firm that involves 682 farmers, Sidiki Sow, has its own small extension staff, but also uses government extension services to support its farmers. The same is true for horticultural schemes in Senegal. Similarly, the SNTI tomato-paste venture in Senegal is owned by a private local firm, but receives some government technical assistance.

One analysis of contract-farming ventures in LDCs has noted "the near ubiquity" of government involvement in the schemes, and that this suggests that the schemes are inherently unprofitable without subsidized support (Goldsmith 1985:1134). However, our research indicates that government participation is neither ubiquitous nor an essential component of all contracting schemes. While slightly over half of the schemes that we have studied do involve government participation, this was due in part to the larger body of literature that exists on these schemes, and the easier access to information on these ventures compared to private-sector ventures. Further, while many of these schemes are indeed unprofitable, as the following sections will indicate, this does not necessarily suggest that this is attributable to any characteristic inherent in contract-farming ventures. In many cases it is due to such factors as the priority given to political and domestic policy objectives, rather than commercial considerations. Other contributing factors include the faulty design and weak management of many government-sponsored schemes, or to uncontrollable external events, such as drastic unexpected decreases in world-market prices and the resultant lack of competitiveness of the products produced vis-à-vis competing imports or exports.

2.5.4. Bilateral and multilateral donor institutions

Of the contracting ventures reviewed most intensively for this study, there was bilateral or multilateral support for 43 percent of the projects. The most active donors were IBRD, CDC, FED, and FAC; other donors that also participated in certain projects include AID, Saudi Arabia, Federal Republic of Germany, IFAD, OPEC Fund, Islamic Development Fund, Switzerland, African Development Fund, East African Development Bank, United Kingdom, African Development Bank, World Food Program, FAO, CCCE, Netherlands, and EEC.

The principal contribution of these donor institutions has been the provision of financing for the initiation and support of various aspects of the schemes during their first few years of operations. There are four principal forms of financing contributed by the different donors: equity participation, grants, concessional loans, and loans at commercial interest rates.

Equity funding by donors is apparently a relatively rare form of financial participation in contract-farming ventures. CDC is unique among the donors in this respect, since it frequently takes an equity position in these projects. The only other donor that apparently purchased equity in the cases we reviewed was the East African Development Bank, which provided three percent of the equity funding for the Mumias sugar scheme in Kenya. The Mumias scheme is also unique among the donor-supported projects that we analyzed in that it was funded entirely with equity financing. Its equity participants included CDC (17 percent), Booker Agriculture International (4 percent), the Kenya Commercial Finance Company (5 percent), the Kenyan Government (71 percent), and EADB (3 percent).

The most frequent forms of donor support for contracting ventures include grants and concessional loans. These funds are used for several principal purposes, including salary support for local and expatriate management and technical staff, staff training, technical and management advisory services, background agricultural research and subsequent nurseries or seed-multiplication activities, the construction of infrastructure such as roads and storage facilities, the foreign-exchange component of necessary equipment purchases such as those for trucks and agricultural inputs, and short-term needs for working capital to finance agricultural-production activities.

Complete data were not available from the field studies or literature to ascertain the exact terms of donor loans to contracting ventures. However, in accordance with the usual lending practices of the donors involved, it is presumed that most involved concessions in terms of interest rates, grace periods, or payback periods. The one contracting venture that clearly received a donor-sponsored loan at commercial terms was the OCAF sunflower-seed project in Kenya, which received an AID loan at 18 percent annual interest rate. The loan was administered by the Kenya Commercial Finance Company, a mostly private bank, and was part of an AID project to channel medium-term loans to private companies through local private financial institutions.

The donor-supported schemes almost always include substantial government involvement. These schemes are generally large rural-development projects designed by governments as part of major regional-development activities, aimed not only at

raising farmer incomes in these regions, but also at fulfilling national macroeconomic goals of foreign-exchange generation or import substitution. These collaborative ventures between donors and government agencies are clearly the largest of the schemes that we examined. Many include more than 5,000 farmers, and some are massive, such as the KTDA tea operation in Kenya (150,414 smallholders contracted), the SODEFITEX cotton project in Senegal (82,575 in 1982), the CMDT cotton scheme in Mali (72,000), Kenya's Mumias sugar company (27,400), and the SODAGRI rice project in Senegal (13,796). In contrast, only a few of the schemes without donor support involve more than 3,000 farmers, including the private Njoro horticultural venture in Kenya, which includes approximately 16,000 growers; the BAT schemes in Kenya, Nigeria, and Tanzania (10,000, 7,000, and 4,600 respectively); and the Cameroonian tobacco venture, SCT (7,000).

A few of the donor-sponsored projects were also quite small, involving fewer than 1,000 farmers. These include the oil-palm projects in Ghana and Cameroon (TOPP involves 300 growers, while SOCAPALM plans to contract 500; both also include nucleus estates); the Zaria tomato-paste company in Nigeria (960); the SAPH rubber venture in Cote d'Ivoire (500); the Kaleya sugar scheme in Zambia (300 projected); and SOCAM, the Malian company that produces fruit juices, purees, and syrups, as well as tomato paste (presently 50 farmers are contracted, but this number may be expanded if additional funding can be obtained).

The aim of the donors is generally to provide financial, management, and technical assistance for the start-up of the ventures, but that eventually the schemes will become self-sustaining, with gradual assumption of management and technical responsibilities by local personnel. The most notable example of success in achieving this objective is KTDA, which is not only one of the largest and most successful contracting schemes in Africa, but is generally considered to be one of the most efficient and profitable parastatals. Although initially the project received some management and technical assistance from CDC and several British tea companies, full responsibility in these areas was gradually assumed by KTDA officials. Similarly, in Mali, CMDT initially received management staff support from CFDT and FAC, but eventually was fully staffed by Malians, with some continuing advisory assistance from CFDT.

Many donor-sponsored projects are funded incrementally, with initial funding to demonstrate the viability of and local support for relatively small-scale schemes, sometimes involving only agricultural-production activities, and subsequent tranches of funding for expanded schemes and possibly processing facilities predicated on the success of the initial activities. However, donor involvement, particularly in incrementally funded projects, usually implies a certain degree of oversight, supervision, and evaluation, as well as donor approval of management practices.

Thus subsequent tranches of funding may be viewed by local officials as a signal of donor belief that "all is well;" whereas this may not, in fact, be the intention of the donor. This was the case in the STA tea project in Malawi, where several factors, apparently including inadequate donor oversight and supervision, resulted in subsequent phases of funding to be approved before the technical viability of the scheme was demonstrated, as well as the competence of the management structure (see Palmer-Jones 1987). The continuing donor support was interpreted by STA management as a signal of approval of the technical basis and management practices of the scheme. However, the donor was actually quite disturbed about several aspects of the operations, but failed to articulate these views in a sufficiently forceful manner or to exert pressure on the scheme's managers. The subsequent funding of the project, despite its difficulties, encouraged the managers to avoid making the fundamental reforms that the project clearly needed in order to be successful, and the project continues to "stagger along" after twenty years of subsidized operations (Palmer-Jones 1987).

With the recent shift among donors from project to program lending, donor support has increasingly become associated with a policy dialogue. Part of this dialogue relates to questions of crop prices, exchange rates, and the role of public- versus private-sector trading firms and industrialists. These all may have a direct bearing on existing contract-farming schemes or influence the future incidence of contract farming. The current push among donors in Africa for increased private-sector investment and export promotion has already resulted in the creation of some joint ventures, which have elements of contract farming.

3. The Initiation of Contract-Farming Operations

3.1. The choice of contract farming

The principal reasons for a private firm and/or public institution to select smallholder contracting as a means of commodity procurement are:

(a) limited financial resources of the venture, particularly relevant for small- and medium-scale private local firms. Firms may lack the finances required to purchase the land and agricultural-production equipment, such as tractors, harvesting equipment, irrigation facilities, and pumps, necessary for large-scale farming operations. Utilizing small farmers with ownership of or usufruct rights to land and who perform many tasks by hand obviates the need for such investment capital.

(b) limited availability of suitable land. Prospective ventures may find that there is no suitable unused or unowned land available. There may also be explicit or tacit limits on the amount of land that may be held by a single firm. In many countries, the best land with irrigation potential is publicly held and not available for purchase in large tracts.

(c) preference not to own land. Owning large tracts of land is viewed by many local and expatriate companies alike as a potential political liability that might engender negative public or government reaction, particularly if the scheme is successful (this apparently was the case for Bud Senegal). Although expropriation presently appears to be a relatively infrequent consequence of land ownership in Africa, the fear of expropriation leads many private companies, particularly expatriate firms, to structure schemes with minimal investment in land. Their holdings are often restricted to agricultural research stations, small areas for the production of planting materials, or demonstration plots. Acquiring larger tracts may also involve dislodging squatters, which both local and expatriate firms generally prefer to avoid. Even companies that own land may be prevented from cultivating it because of the presence of squatters and the potential negative social reaction to dislodging them. This is the case for some firms in Haiti, and may also hold true for some landowners in Africa. This preference not to acquire large holdings applies both to start-up ventures and to existing enterprises that are already farming their own lands. When they expand or diversify their operations, the latter often prefer to initiate contracting, rather than to increase the size of their holdings. Limiting their investments by not purchasing land also provides both expatriate and local firms greater flexibility to terminate their operations, should economic or political circumstances warrant such action.

(d) lack of experience in agricultural production. Many of the local firms and joint ventures with expatriate firms are fundamentally commodity marketing or processing companies with neither capability nor experience in agricultural production. Others, such as several of the Senegalese horticultural-export operations, were involved in unrelated business activities and decided to diversify into commodity exporting, in response to an apparent market opportunity. Both groups of firms often select to contract rather than to purchase on the open market mainly because contracting offers greater control over the timing, quantity, and quality of commodity supply.

(e) the need for timely, dependable commodity supplies. Economies of scale in many processing operations, as well as the minimum economic scale of these operations, particularly the more complex ones, require the dependable delivery of relatively large quantities of commodities; further, these deliveries must be timely, in order to minimize factory downtime, and must conform to quality specifications. Contracting is often viewed as offering greater control over deliveries than open-market purchases, since contracts often include specified planting and harvesting dates, staggered among the producers, as well as specified cultivation practices to assure the required quality of produce. Sometimes there are also requirements for a particular crop or variety that is not generally produced or consumed in the appropriate agro-climatic zones; in such cases, factories are compelled to contract their production if, for other reasons, they choose not to produce their own raw-material supplies.

Firms with very small and simple processing operations, like the Malian, Kenyan, and Senegalese horticultural exporters that clean, grade, and pack fresh produce, also require timely, dependable deliveries of supplies. They not only have overseas contract commitments to meet, but they also must reserve air-cargo space, and are penalized for failure to utilize reserved space. Thus open-market purchases are considered by some to be too unreliable to depend on for more than a limited portion of their total procurement.

(f) the availability of experienced private growers. While the larger companies and government- or donor-sponsored schemes may have the resources to train farmers in the cultivation of new crops, smaller companies often lack such resources or the technical capability to perform this function. Further, qualified technical personnel may not even be able for hire, and the smaller companies may not feel financially able to train such personnel. In such cases, the availability of an experienced, capable pool of private growers may be a requirement and an inducement for the initiation of an agriculturally related business. For example, in Senegal the availability of farmers trained in the production of several horticultural crops under the Bud Senegal operation was the stimulus for many of the private contracting/exporting firms, which presently account for the great majority of Senegal's exports of these crops.

(g) reduced labor recruitment and management requirements. In many of the cases reviewed, firms undertook contract production rather than estate operations because of the less-intensive management requirements of the contract schemes. The complexity and labor intensity of growing and

harvesting certain commodities has led some firms to conclude that it is virtually impossible to conduct these operations in a large scheme with paid labor, given the intensive supervision needs and the difficulty of devising appropriate incentive and control systems. This was the eventual conclusion of the STA tea scheme in Malawi, which was unable to maintain both quality and yields in its estate operations and was unwilling to pay the supervision costs of further attempts. Farmers were then assigned individual plots in a contracting arrangement, and further expansion was accomplished through contracts with private farmers. Although there were still certain supervision and monitoring costs, farmers had a more effective incentive to follow recommended practices to maintain both quality and yield performance over time. Thus the management cost to the company was considerably lower than in the less effective estate operation.

(h) reduced labor costs. For some commodities, the cost of production on large farms or estates, which depend on hired labor, may often exceed the prices that small farmers consider attractive or acceptable, since small farmers generally depend largely on unpaid family labor. The difference in production costs obviously varies according to the labor intensity of the growing and harvesting operations. For the more labor-intensive crops, firms may feel that smallholder production is the only viable means of production, not only due to the greater attention that family farmers can give their crops, but because of the lower prices that they will accept.

(i) the time horizon of the firm. Both companies and farmers that view their involvement as a relatively long-term venture prefer contracts to assure the promised participation of the other party. This is true mainly in schemes involving crops with long gestation periods (such as tree crops) and considerable initial investment by either party (including the farmers' commitment of land, as well as investment in on-farm processing facilities, as in the flue-cured tobacco scheme in Nigeria, where farmers were required to build curing barns). Alternatively, companies involved in activities requiring little initial investment and unstable or saturated markets, as in the Senegalese horticultural operations, may prefer the flexibility and "easy exit" option that contracting, rather than purchasing land, may offer.

(j) the superior quality of small-farm output. Several companies with experience in estate production or the contracting of large farmers now prefer smallholder contracting, due to the more meticulous attention that small farmers often devote to their crops and the resultant

superior quality of their output. The experience of KTDA confirms this view, at least for certain highly labor-intensive crops; this tea scheme, which includes both estates and smallholders, found that the quality of output from small private plots was consistently higher than that of their estates. KTDA officials subsequently concluded that tea quality decreases as plot size rises above 0.4 hectares (Lamb and Muller 1982).

In summary, most firms either see contract farming as either the only vehicle or the most effective mechanism by which they can enter into a particular activity, or as a means of reducing various types of risk or of sharing these risks with the participating farmers. However, not all companies share these views; some retain diametrically opposed perceptions about the possible quality of small-farmer output or the ability of contracting to reduce company risk. For example, despite the success of BAT, Hagar, and MAVOCI tobacco operations in Africa, a French/Senegalese cigarette company that processes imported tobacco firmly believes that local small farmers are incapable of producing tobacco of the quality that the company requires. Similarly, several of the Senegalese exporters view contracting as more risky than other alternatives, due to the possibility of farmer default on contract provisions and the lack of meaningful recourse in such cases. Some companies also see smallholder contracting as inherently less flexible than alternative means of procurement, due to the farmers' inability or resistance to shifting crops quickly in response to changes in market demand. In many cases these different perceptions vary according to the size, capabilities, and resources of the different companies, as well as to their experience with and general attitude about small African farmers.

3.2. The choice of production location

Although agro-climatic considerations and the availability of irrigation resources will usually dictate the choice of production location, there may also be several other factors that influence this decision. Companies with substantial resources and highly profitable products sometimes prefer to locate production in isolated areas with little marketing infrastructure and few alternative market outlets, in order to control possible commodity leakage. However, smaller companies are forced to select areas that are accessible, with adequate infrastructure, in order to minimize the cost and time required for input distribution and crop collection. Producing in several dispersed areas simultaneously increases company costs, although there may be advantages in terms of the diversity of harvesting dates in the different areas, thereby assuring a more steady, less concentrated flow of produce to the company. Some companies have chosen densely populated areas in order to assure an adequate supply of labor, while others have explicitly selected relatively

"deprived" areas with few other cash crop alternatives, in order to maximize farmer commitment to the project.

3.3. The choice of processing technology

The decision to undertake processing activities and the choice of the scale of the processing facility are critical decisions that may ultimately determine the success or failure of the company operations. Purchasing and operating processing facilities significantly increases company overhead costs, and their successful operation depends on an adequate, timely supply of raw materials. In several of the case studies, project designers overestimated the initial yields of contracted farmers and the rate at which farmers could be brought into the project. At the same time, they tended to invest in large-scale, state-of-the-art plants that were not only costly, but require large raw-material supplies. As Tom Zalla has noted, "It is usually more economical to run a small processing operation at full capacity than a larger, more technically efficient facility at 2/3 capacity (1986:6)." Some of the processing operations examined in the case studies rarely reached the break-even point in their plant activities and were forced to cover deficits with funds from other sources. In the STA tea project in Malawi, overinvestment in plant facilities, as well as various management problems, led to a diversion of bonus funds earned by growers to cover the deficits of the processing activities. This exacerbated grower dissatisfaction with the project and stimulated a general feeling of mistrust of management. However, in the PAPD dehydrated-vegetable project in Kenya, inexperienced managers went to the other extreme and purchased plant facilities that were too small to allow the overall scheme to be viable. Further, their lack of technical knowledge led them to purchase some machinery that was badly designed, nonfunctioning, and designed to process vegetables that could not be produced in the project area. The scheme ultimately went bankrupt, partly due to these unwise decisions in the selection of processing facilities.

3.4. The choice of agricultural-production technology

The importance of appropriate agricultural technologies in contract-farming schemes is discussed in considerable detail in Chapter VII, and is only briefly mentioned here. The company's choice of the agricultural input package and practices to be followed is absolutely vital to the success of a contracting venture. This choice will influence or determine such factors as farmer commitment of land and time, production costs, yields, farmer profits and continuing commitment to the project, and the quantity and quality and of raw-material supply to the contractor. The latter, in turn, will influence processing-factory efficiency and the ability of exporters to meet their contract commitments. In developing new technologies, small companies are at a disadvantage vis-à-vis large firms. Because

of their limited resources and ability to conduct any research on new crops, to train farmers in new practices, and to supervise and monitor these practices, smaller companies are generally restricted to known packages and the existing skills of farmers.

3.5. Capital requirements

There are only minimal data on the initial investment costs of the various types of schemes, except for a few donor-sponsored schemes. The KTDA scheme, which initially involved the construction of 18 factories and certain infrastructure, as well as growing activities by 66,500 farmers, received a total of \$15.6 million in donor and GOK funding over a seven-year period (1964-71) (Lele 1975). The Jahaly Pacharr rice venture in The Gambia, which included 3,000 farmers, received \$25.49 million in donor assistance from 1982-87, although \$15.5 million of these funds were invested in the development of irrigation infrastructure (Carney, Volume II). In both schemes, however, a substantial portion of this funding was in the form of loans, not grants.

Regardless of the cost of processing facilities and infrastructure, the annual working-capital requirements of contract-farming schemes are, especially to small private firms, quite considerable. John Horton found that the average Senegalese horticultural export operation requires \$1.0 million in annual working capital to cover inputs, extension support (that is generally minimal), and marketing services to growers, as well as their limited processing facilities (see Volume II). While after the first year of operation some of these requirements will be covered by returns generated from sales, he still estimates that the average horticultural export firm requires at least \$500,000 in annual working capital. The smallest viable firms require from \$100,000 to \$200,000. (This also approximates the minimal capital requirements of a poultry-contracting scheme in Senegal, as described by Billings in Volume II.)

Data from the Haggar tobacco operation in Sudan indicate that the cost of the contract-farming operation, which involved 2,343 farmers in 1983, was \$975,610 in that crop year. This covered the cost of the agricultural-production activities, curing of the crop, storage, and transport. The budget included approximately \$81,300 in farmer-input expenses (\$35 per farmer), \$203,252 in extension expenses (\$87 per farmer), and another \$162 in loan funds for each new farmer for the construction of curing barns and tools.³

Despite the lack of precise data on the costs of the various schemes, the available data suggest that the working-capital requirements for contracting schemes, even without large and complex processing facilities, are indeed considerable. This is

particularly true for small local companies without access to institutional credit, which was apparently the situation for most of the local private schemes examined.

4. The Management Structures of Contracting Institutions

4.1. Overall management requirements

The management requirements of schemes, with vastly different characteristics in terms of size, complexity of agricultural production, processing operations, and commodities produced, vary considerably. Nevertheless, there are several common elements, which are outlined below.

First, the management of any agribusiness venture, public or private, which involves various interrelated activities (such as the delivery of credit and inputs, the provision of technical support, crop collection, the operation of a processing facility, and marketing) requires a diversity of technical and business skills. Further, the particular risks (climatic, environmental, etc.) faced by agribusiness ventures require additional skills that are necessary to a certain degree in any company but particularly critical in agribusiness operations. These include flexibility, adaptability, and creativity in dealing with unexpected, uncontrollable events. Contract-farming operations demand unique additional skills in order to create and maintain the compliance and commitment of numerous independent, autonomous, and sometimes spatially distant small farmers over whom there is little direct control. Finally, the ability to work effectively with host-country central- and regional-government officials, as well as various multilateral and bilateral donors, is a requirement for many of the ventures. This may be particularly problematic because of the diversity of and possible conflict between the various objectives of these different organizations. As an evaluation of the Mumias sugar scheme noted, contracting ventures, particularly those with social and development objectives, require very special management skills, for

the quality of management is of critical importance in this type of scheme. Many other skills were required in addition to those usually associated with running sugar factories, such as the ability to communicate effectively across cultures and at all levels with host country nationals. . . . [This] type of project, which combined social and economic development goals in a new, more equal balance, imposed a much greater burden on available technical, and especially management resources. Directors and on-site managers had to be sensitive to issues and events well outside the immediate purview of the project contract, as well as having to cope with more difficult implementational tasks (Scott 1978:11).

Many of the publicly supported rural development/contracting schemes are enormous in scale and complexity. They involve not only many thousands of farmers, often in different geographic regions, but multiple funding agencies; numerous government ministries; many different input suppliers; large numbers of technical and managerial personnel, who often work away from headquarters in rural zones; and sometimes numerous factories. Not only must each different facet of the vast operation be managed, but also the sequencing and coordination between them must be supervised. Thus, the management requirements for these schemes are particularly demanding.

The management requirements for most schemes, both large and small, are greatest in initial years, as new systems are being implemented and modified; farmers, extension personnel, and other staff are being trained; and the scale of operations is expanding. Obviously the economic costs of management are also greatest during this period. Generally, after a few years of operations, both management requirements and costs tend to drop off as training inputs and advisory support are eliminated or significantly reduced.

Despite the significant and diverse skills required to manage an agricultural production/processing operation that includes a contract-farming scheme, it is generally believed by the companies engaged in these operations that the management requirements are less than would be the case for a vertically integrated venture exclusively using a hired labor force. Although the company loses a certain degree of direct control over their farmers' actions, it can utilize less comprehensive supervision, monitoring, and control systems in the management of the contract-farming schemes than for an estate-based operation.

4.2. Key decisions in the organization of grower activities

In the organization and management of grower activities, there are several key issues that affect the nature and scale of the management structure and systems employed by the contracting enterprise. The most obvious, of course, is the scale of the contracted activities--the management requirements of a firm with 30 farmers contracted, such as the Ets. Moussa N'Doye in Senegal, are completely different from one with 150,414 farmers, such as the KTDA. Several other key management decisions are outlined in the following sections.

4.2.1. The functions to be performed by the contracting institution

Our definition of contract farming includes those firms that at least provide inputs and output-disposition services to farmers. However, the nature of the inputs and the care with

which they are selected varies considerably among the firms, as does the nature of the output-disposition services. Further, many companies perform a variety of other types of functions in addition to input delivery and marketing support.

All of the contracting institutions involved in agricultural production provide some sort of planting material. Some of these are imported (especially in the case of the smaller companies), while in other instances, the planting materials are produced in-country by the company. Depending on the particular commodity, agronomic requirements, and recommended practices, other inputs, such as fertilizers, pesticides, and herbicides, may also be provided. In some cases, as in the Ghana Oil Palm Development Corporation, the company has also leased land to small farmers; and in several others, the companies provide land-preparation services using mechanized equipment, such as land-clearing or tilling services. Many schemes also provide any necessary tools. In most cases the tools are sold to the farmers on credit, although occasionally such equipment may simply be loaned. A few of the tobacco schemes also provide assistance in the construction of any on-farm curing facilities that are required.

Most companies provide these inputs in-kind, with deductions to cover their costs from future commodity deliveries. For crops involving more than a year's gestation period, grace periods are usually given on repayment until the crop actually comes into production. One company, BAT/Kenya, initially provided seedlings free of charge, but found that some farmers either did not care for the seedlings properly or even sold them. Subsequently a nominal charge for the seedlings was introduced. Schemes involving crops that require care over a several-year gestation period may also provide cash advances for labor. This is true of the Haggard coffee scheme in the Sudan and the Palmindustrie palm-oil venture in Cote d'Ivoire. Projects involving the collection of wild crops may also be obliged to offer cash advances for labor, as well. The ESTPV herbal tea company in Senegal not only provides labor advances to cover the collector's labor and the cost of any labor that he might hire, but also provides subsistence advances to sustain the collector's family during the off-season. Cash advances may also be provided to cover the cost of any necessary facility construction, such as the tobacco-curing barns, for which the tobacco companies generally extend credit; however, in other cases, farmers are required to finance their own facilities.

In some schemes the contractors collect the farmers' produce from each farm site periodically; while in others, the farmers may be required to provide their own transportation to a collection point. Usually such points are located within a few kilometers of each producing site, since small farmers generally lack any mechanized means of transportation, and even an animal-

drawn cart may be expensive to purchase or rent.⁴ In ventures requiring any marketing inputs, such as cartons, these are generally provided by the company (see Jaffee, Volume II).

In many situations, the contracting company is the small farmer's only source of inputs necessary for the production of crops other than the contracted commodity. Thus, the companies are encouraged by farmers and/or governments, or even required by governments, to provide inputs for these other crops as well to project participants. This is true of many of the West African cotton schemes, which serve as the main source of inputs for food crops in their contracting regions. This can constitute a strong inducement to farmers to participate in the scheme. For example, in Burkina Faso, farmers outside the SOFITEX cotton project often find it impossible to obtain inputs on a timely basis, or even to obtain them at all, thus leading some to agree to participate in the scheme partly in order to obtain inputs for the production of crops other than cotton.

4.3. The selection of growers

The selection of the participating growers is one of the most critical decisions to be made by a company; the participants' compliance with recommended agricultural practices and adherence to contracted commitments is a key factor in determining the ultimate success or failure of a scheme. There are several different criteria that most companies consider: the principal factors are the suitability of the farmers' land and the amount available; the personal qualities of the growers; their farming skills; their ability and/or willingness to undertake any necessary investments; and possibly their support by political leaders or field managers designated by the company to select the participants.

4.3.1. The characteristics of the farmer's land and his/her other farming activities

Generally, companies first select a particular region that is suitable for the production of the desired commodity. Within that region, farmers may be selected according to the characteristics of their particular plot, as well as their ability to make the required amount of land available for contracted production. This becomes especially important for crops requiring long gestation periods, where the farmer may be obliged to forego income from the necessary land during the start-up period, which may be several years. Because of the political importance of food security in many African countries, some of the larger companies have complied with host-country government concerns by requiring that participating farmers not only be able to provide the necessary quantity of land for the contracted crop, but that they also possess an additional amount

of land on which to maintain their production of food crops for family consumption.

Although some observers attest that companies generally prefer to contract with larger "small farmers" for various reasons, such as their greater "sophistication" and openness to innovation, our research indicates that this is not generally true in many parts of Africa (Glover 1984). In fact, many of the companies that we examined explicitly prefer smaller farmers due to their greater attentiveness to their crops, the ability of family members to satisfy most labor requirements, and the greater interest of the farmers in the success of their contracted activities, as well as their greater dependence on these activities as a source of cash income. One comparison of the Ugandan and Kenyan tea schemes, UTDA and KTDA, concluded that the Ugandan venture was much less successful partly because the larger small farmers contracted in that scheme were less dependent on their tea activities, less committed to them in periods of low prices, and less willing to accept discipline, than the small farmers in the KTDA scheme.⁵ KTDA officials also found that in Kenya, the smaller farmers consistently produced a higher quality of tea than the larger small farmers contracted. KTDA did, however, exclude the poorest of small farmers from the scheme, due to their inability to divert land for the required gestation period.

4.3.2. Ability and willingness to undertake investment in facilities

Several of the tobacco schemes require candidates to construct on-farm curing barns and facilities. Although credit and technical assistance are generally provided for this purpose, companies view the farmers' willingness to undertake such investments as a symbol of their commitment to the project and as a measure that lessens the probability of farmer default on any subsequent credit provided. As Parker Shipton described the views of BAT/Kenya managers,

the requirement of a capital, labour, or time investment on the part of farmers joining a scheme does not necessarily serve as a disincentive for them to produce. It may even deepen their commitment to the project. Having to build a barn to participate in the tobacco scheme gave farmers . . . [a] stake in their loan scheme (Shipton 1985:306).

4.4. The use of written contracts by firms

Many of the schemes that we examined use formal written contracts that were signed by the participating farmers. These contracts are very simple, noting only the value of inputs delivered on credit. Other firms use somewhat more complex contracts that specify certain agronomic practices, as well as

the value of inputs. A particular contract from Ets. Sidiki Sow in Mali, a contractor of French beans for export, includes the following specifications: (1) that all of the producer's output be sold to the firm; (2) that the company market the product in the most efficacious way possible; (3) the sale price of the farmers' produce; (4) that the farmers observe precise planting dates; and (5) that the beans be harvested every two days.

Contracting companies generally convey to participants that if contract commitments are not honored, legal recourse will be sought. In many cases statements to this effect are included in the contracts, as in the two examples above. The N'Doye firm takes the additional precaution of having the contract signed not only by the grower and company representatives, but also by the local commissariat of police. This apparently gives the document no additional legal status, but serves to underscore to the grower the seriousness of the contract.

Few companies actually believe that, should the contracted grower default on his or her commitments, legal recourse can be achieved (at least for the value of any inputs delivered). Even if this were possible, most companies would not wish to be in the position of seizing a small farmer's assets, particularly his or her land. Thus most managers accept default and losses to the company as a risk and cost of contracting operations. Most companies simply absorb the loss and drop the farmer from the scheme in successive years. However, in cases where farmers are being leased or lent land, the farmer would lose his or her rights to future production on the land, a rather serious consequence.

Some companies manage to maintain extremely low rates of farmer default. Their ability to accomplish this depends on a variety of factors, such as number of alternative market outlets for the crop, the fairness or competitiveness of the prices offered by the company, the dependency of the farmer on the services and/or inputs provided by the company, and the intensity of the company's farmer-monitoring activities. However, despite any efforts, a few companies have experienced rather high default rates. This was especially true of the Njoro Cannery's project (Kenya) in its early years when farmer default on loans was high due to low production and inability to meet yield commitments.

Clearly, farmer default is not always due to efforts to defraud the contracting company. In some cases, there is strong farmer dissatisfaction with company policies or prices, or a feeling that they are being treated unfairly or unethically, (i.e., it is the company that has "defaulted" the agreement). When efforts to persuade the company to modify these policies or prices fail, farmers have no other recourse than to default and leave the scheme. In other cases, climatic or other agronomic conditions may cause crop failure that prevents the farmer from

meeting his or her obligations; a few companies have policies to assist the farmers by absorbing some of these losses, at least by erasing the farmers' debt to the company. The Kenyan Horticultural Enterprise is one such company, although it is not clear exactly how many other companies also have such policies.

Many contracting firms view contracts simply as a formal mechanism to express the mutual trust and interdependence between the company and the farmer. They feel that it is a useful tool in underscoring to the farmer a sense of commitment, responsibility, and pride. As Steve Jaffee noted in his analysis of the Njoro cannery scheme in Volume II, the company's contracts

engender a perception of continuity and common interest and effort [between the company and the farmers]. Rather than seen as an alternative to trust, contracts are viewed by the company as the frameworks in which to develop relationships based on trust (1987:37).

4.5. The system of pricing and payments to farmers

There are several principal options concerning systems of pricing of farmers' output. These include fixed prices established before the planting season, variable pricing determined by the prevailing market rates, and variable pricing determined by the grower's performance and/or that of the company.

Most of the smaller companies appear to use rather simple pricing formulae with prices established before the crop year. In the Senegalese horticultural sector, prices are based largely on prevailing market rates that remain relatively stable over time. The Senegalese companies are basically price takers from the Paris market, and since the market is saturated and competition is high from other countries, margins are relatively low. Thus there is little room for latitude in negotiating prices with farmers. Further, farmers are aware of the prevailing rates within country. One company, SENIMEX, noted that in its case, the growers state their prices, although there is a relatively high degree of uniformity among the prices demanded by producers. One company, SAAF, has developed a slightly more sophisticated method of setting prices--each year it establishes a price that is slightly higher than the average market price over the previous three years.

Companies that include more complex processing activities and commodities with few or no alternative markets have more control over the setting of prices. Some have mechanisms to include the articulation of farmer views, such as the PAVP dehydrated-vegetable-processing facility in Kenya. Its prices are deliberated each year in consultation with farmer committees. However, Jaffee's analysis admits that ultimately prices are

offered to farmers on a "take it or leave it" basis. As do some processing companies with precise input requirements, PAVP pays a bonus to farmers who deliver the quantity guaranteed in the contract; in the case of PAVP, the bonus is a considerable 40 percent of the basic agreed price. Other companies distribute an end-of-year bonus based on the overall profits of the company. However, some of the perpetually unprofitable parastatals rarely offer such bonuses, thereby creating dissatisfaction among the participating farmers, particularly in the years when farmer performance is particularly commendable. The STA tea scheme in Malawi has sometimes diverted bonus funds earned by farmers to cover deficits in other components of the company's operations, causing farmers rightfully to feel that they were being cheated by the institution (Palmer-Jones 1987).

Canning companies habitually offer prices that are somewhat lower than prevailing market prices. This is partly due to the fact that they often face highly competitive markets and face low margins if they have high technical advisory costs or are unable to operate processing facilities at the more profitable higher levels of output. As Nick Minot noted, "Fruit and vegetable canneries, particularly the publicly financed ones, are often based on unrealistically low estimates of alternate market prices (1986:74)." In some cases, such as the Njoro cannery scheme, farmers agree to these prices if they value the other services that the company provides or the assured market that the company can guarantee. However, in periods with much higher market prices, such firms may encounter considerable rates of commodity leakage or default, thereby sabotaging their own ability to secure an adequate supply of inputs to the factories and achieve economic scales of production in the processing activities.

Most companies agree that it is extremely important to pay farmers on a predictable, timely basis, soon after the delivery of the crop. Some deduct the value of inputs from the first deliveries, while others, such as Ets. Thierno Drame in Senegal, feel that farmers are more motivated if they receive the full value of the crop at the time of initial delivery, with deductions made later in the crop year. In schemes with variable pricing that depends on market prices, some managers feel that it is advisable to assure farmers a definite amount upon delivery of their first output. Subsequent payments may be reduced if market prices have decreased. This is the policy of the managers of the Jahaly Pacharr rice scheme in The Gambia. They attempt never to reduce the first payment to farmers, regardless of market conditions.

4.6. Organizational structures of contracting schemes

The organizational structures of many of the projects and companies that we have reviewed are described as highly centralized. This applies particularly to the private local

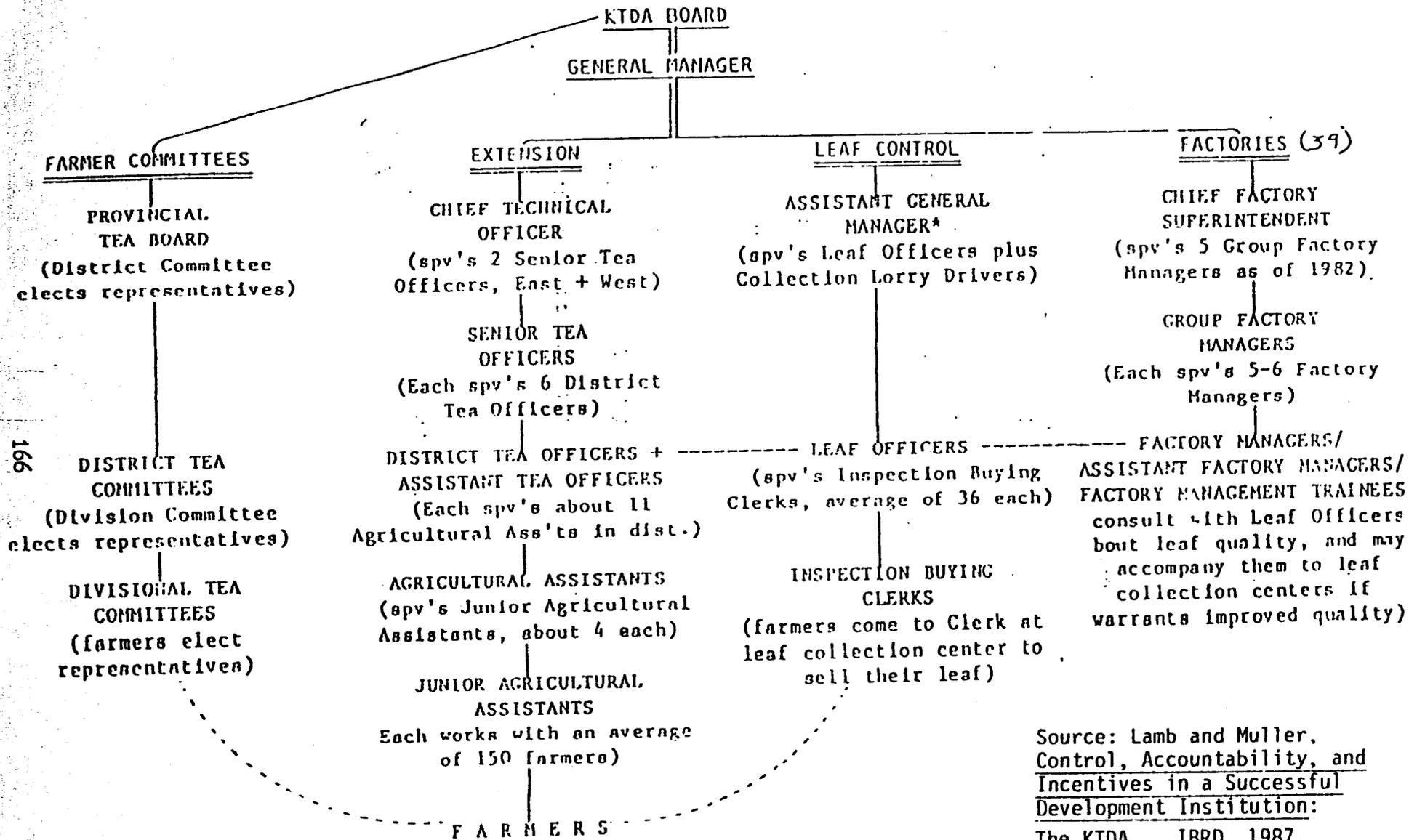
firms and the large, government-run schemes. In contrast, the ventures that include management participation by the larger private (usually expatriate) firms are depicted generally as having more decentralized structures, with decision-making authority and autonomy in the various discrete divisions of the institutions. This contrast in management structures should not necessarily be attributed to distinctions between the contracting activities of the different types of institutions, but may reflect prevailing patterns of management in LDCs vis-à-vis high-income countries. Typically in LDCs there is a shortage of highly qualified top- and middle-level managers, thereby necessitating rather centralized management structures, whereas in the companies with expatriate management involvement, qualified expatriate managers will initially be imported while local managers are trained to assume full management responsibilities. Further, in the case of the small local firms, the distinction is due to the fact that many are family businesses run by individual entrepreneurs. Like their counterparts in western countries, the organizational structures of such firms are often centralized, with most decision-making responsibility held by the entrepreneur/manager.

The organizational structures of the more centralized contracting schemes are pyramidal and hierarchical, with decision making performed generally by one or a few top officials. Information tends to be disseminated downward, with few effective mechanisms to elicit information or feedback from the lower levels of the hierarchy, particularly from the farmers.

In contrast to such structures, several of the larger schemes with initial expatriate management assistance exhibit extremely complex and decentralized organizational structures. Most notably, the KTDA structure (outlined in Figure 6.1) shows two distinctive features: (1) a high degree of autonomy within the different divisions (each of the 39 factories operates as a separate profit center); and (2) structured mechanisms to generate information and feedback from all levels of the organization, particularly from the farmers, who are allowed to play some role in management. Generally, intermediary organizations, such as farmer cooperatives, have been weak or absent in contract-farming schemes. This impedes farmers' representation and often leaves them in times of dispute, with little recourse other than to withdraw/default or to protest to local politicians (see Jaffee, Volume II; Chapter IV in this volume).

Figure 6.1

CURRENT ORGANIZATION OF KENYA TEA DEVELOPMENT AUTHORITY



Source: Lamb and Muller, Control, Accountability, and Incentives in a Successful Development Institution: The KTDA. IBRD, 1987.

led by Assistant Superintendent and Mechanical Supervisor

Dotted line denotes coordination among DTOs/ATOs, Leaf Officers and Factory Managers on how to distribute excess leaf during flush periods.

The ventures that include active management and technical participation by several different institutions may experience particular difficulties in coordinating and harmonizing these multiple roles. For example, both the Zaria tomato-paste venture in Nigeria and the TOPP palm-oil scheme in Ghana experienced such problems. In the case of Zaria, there were problems in the division and coordination of responsibilities between Cadbury and the Ministry in charge of the scheme. Cadbury was to provide extension support, administer the credit scheme, perform the spraying activities, and transport the crop, while the Ministry was to provide extension services and irrigation system support. However, when the irrigation activities were delayed several weeks and in some cases, several months, the overall project was halted and tensions were created among the scheme's participants, including the participating farmers (DAI 1977). Similarly, in the TOPP scheme, responsibilities were divided between the British company assigned to manage the overall project, and the local development authority, CEREDEC, which handled the smallholder activities. Cyril Daddieh (Volume II) reports that "progress on the smallholder contracting scheme had been very slow partly because of the unresolved tensions between TOPP and CEREDEC management and the lack of disbursement of funds for the smallholder project (1987:343)."

The review of the case studies and literature indicates that a management structure with certain positive characteristics is an important ingredient for a successful contract-farming scheme. The key success factors include:

- (a) flexibility in management operations (i.e. ability to revise strategies in response to perceived problems);
- (b) grower representation and voice in management, including compensation to growers for time allocated to this role;
- (c) assuring grower commitment through such policies as requiring grower investment as a precondition to scheme participation;
- (d) regular, predictable payment schedules for growers, including payment of promised bonuses and financial support for farmers in projects requiring long gestation periods for plant maturation and/or farmer investment;
- (e) performance-based incentive and remuneration systems, not only for growers, but also for management and staff (this is particularly lacking in public schemes); and
- (f) frequent monitoring of farmer complaints and behavior, and the reasons for this behavior (and the subsequent use of these data for revising policies and programs).

5. Financial Performance

There are few generalizations that may accurately be made concerning the profitability of contract-farming schemes, due to the following factors. First, the profitability of individual ventures depends on a variety of features of the operations, including such aspects as the quality of the overall management, the characteristics of the commodity and the market, and host-country policies of taxation and subsidies, as well as any other government policies that may affect a firm's financial performance in either a positive or negative manner. These features affect a firm's performance regardless of whether or not contract farming is used as a mechanism for commodity procurement, and thus bear little inherent relationship to the contracting component of the operations. Second, accurate data on the financial performance of private firms, both local and expatriate ventures, are extremely difficult to obtain; little was in fact obtained during the course of our research. As John Horton observed of his attempts to collect such data for the Senegalese horticultural firms,

The experience of collecting field data on financial performance dictates that a caveat must precede any comment on firm profitability. The confidential nature of the data renders it difficult if not impossible to determine the quality of the data. Some firms merely decline to respond, while others respond in a vague or outright erroneous manner (Horton 1987a).

Third, even when accurate data are made available, it is difficult to interpret due to the interest of some firms in registering accounting losses in order to avoid negative government intervention, such as taxation, or to obtain government assistance, such as tax holidays. Thus, it may not be in the interest of firms to assist in the interpretation of any data offered. As Tom Zalla notes,

Many contract-farming operations are affiliated with multinational companies with ample opportunity to depress the profits of the national firm by shifting them to the parent or sister firm. Overinvoicing of plant and equipment expenditures, packaging, and other intermediate and operating expenditures, and underinvoicing of exports or transfers to other affiliates are common extraction techniques that do not admit to easy control. Many such companies continue operating year after year in spite of chronic losses. Others extract marketing, trade, pricing, and other concessions that assure their financial viability from governments anxious to industrialize (1986:5-6).

Zalla's observation applies not only to schemes affiliated with multinationals, but to other contracting firms and institutions as well.

The available data suggest, as one would expect, that some schemes are apparently highly profitable (such as KTDA, the better-managed tobacco operation, Mumias [before the recent drop in the world price of sugar], and the better-managed cotton ventures [before the drop in cotton prices]), while others are marginal or losing ventures. For example, many of the Senegalese horticultural ventures are marginal, while many of the large government-run schemes, such as Smallholder Tea Authority in Malawi, consistently show negative results. This suggests that contracting alone does not assure a venture's financial success or failure, and also that some contract-farming schemes (even the most massive ones with intensive extension systems) can be highly profitable.

Some firms that undertake the contracting of smallholders have found that these operations are clearly less profitable than other means of commodity procurement. Nevertheless, these firms engage in contracting for the reasons outlined in Section 3 above. For example, Horton reported that the Senegalese firm, SAFINA (Filifili) finds its estate operations much more lucrative than its smallholder contracting, and although its contracting operations presently show losses, is hopeful that performance will improve after further experience is gained by the participating farmers and the company. Further, Horton notes that it is "irrelevant" to compare the profitability of contracting with estate farming (or commodity production in a vertically integrated venture), since "the broad population of contracting firms and farmers are unable or unwilling to undertake estate farming (Horton 1987a)."

Since our interest is largely in the ability of contract farming to provide profitable activities to small farmers, perhaps the most reliable indicator of the financial performance of the schemes is the actual profits earned by small farmers participating in these schemes and alternative income-earning opportunities available to these farmers. These issues are analyzed in detail in the next chapter.

Endnotes

1. One organization that we researched, Senprim, a horticultural-export operation in Senegal, is currently a government corporation under the Ministry of Rural Development; however, it initially included the participation of an expatriate company, Bud Antle of California. Although it is presently operated on an independent basis by government officials, it has retained some technicians and staff from the original private operation, Bud Senegal. Further, plans are currently being made to privatize the company in the near future. The schemes by public corporations involved in contract farming of oil palm in Ivory Coast and Ghana are supported by different donors and private firms (see Daddieh, Volume II).

2. Many of the private local firms are owned by resident Asian, Middle Eastern, and other non-African groups. This could be a potential source of conflict if donor assistance concentrates its efforts mainly on non-African-owned local schemes. In the Kenyan case, ethnic ownership of export firms is a political issue that should be addressed carefully.

3. Ruth Karen, 1985:103-104, 107. The source did not specify the number of established and new farmers; thus it is not possible to specify the cost of input expenses per established farmer or the total tool and barn expenditures for new farmers.

4. In one soybean-contracting venture in Costa Rica, the small farmers were forced to drop out of the program, since collection points were located 50 km from the producing areas, and farmers could not afford or even obtain trucks to transport their output.

5. William Rendell quoted in Glover 1984, p. 1152.

CHAPTER VII

TECHNOLOGY TRANSFER AND EXTENSION

1. Introduction

This chapter addresses two related dimensions of contract farming--technology transfer and extension. Because contract-farming projects frequently make use of a dedicated¹ extension force, impressive production results and rates of technical input use are frequently obtained. Such results stand in stark contrast to the weak impact of many production-promotion campaigns carried out by national extension services. This is not to say that the production results of contract-farming schemes are always outstanding. While many schemes do succeed in introducing a new crop or expanding the production of an existing crop, scheme objectives related to total output, farmer participation rates, and farmer productivity are sometimes not obtained.

The particular successes of contract farming have caused governments to consider attempting some elements of contracting in areal- or commodity-development efforts. National extension services are often mobilized in support of the effort (examples, developed below, include tea in Kenya and rice in The Gambia). The most common actions include a doubling or tripling of the extension-farmer ratios, intense training of agents in a particular technology, and the corollary provision of inputs (and credit) that might otherwise be unobtainable. Even so, results have not on the whole been spectacular, and a number of outright failures have occurred.² What accounts for the difference in results? Is it method, approach, staff, or the presence of contracting firms vis-à-vis government organizations?

Contract extension gives the impression of being a conduit through which new technologies may be rapidly introduced. Case studies reveal instances where smallholders have mastered relatively complex crop technologies related to cultivation practices and postharvest techniques. These practices might not have been adopted without a concentrated extension effort and an ongoing contractual framework. However, do technologies introduced for one crop spread to others as farmers' skills improve? Is there an autonomous diffusion of these skills beyond the farm gate? Do skills introduced under contract persist even when the contract is no longer operative? These are important concerns that go to the heart of many particular development strategies.

2. Technology Transfer and Contract Farming

Proponents of contract farming argue that the institution holds considerable potential for transferring technologies to African farmers. Contract-farming schemes have sought to transfer technologies and skills such as water management, pest and disease control, postharvest quality control, pure stand cultivation, use of improved plant varieties, and use of chemical fertilizers. Some skills have proven to be transferable to non-contracted crops, while other skills have not. Contract farmers do have considerably higher rates of modern input (e.g., fertilizer) use than other African farmers. However, it is when these techniques can be transferred to a wider segment of producers and noncontracted crops that significant technical transformations will occur.

2.1. Factors facilitating/inhibiting technology transfer

Several lessons regarding technology transfer emerge from our case studies and other African contract-farming schemes. First, the cost of acceptance, which is borne by the farmer, must be within reach. Crops or techniques that demand substantial investments by the farmer in water-management facilities and/or expensive capital items such as tractors or machine-drawn equipment are not going to be widely accepted, except among the wealthiest producers. It is unlikely, for example, that pump-based irrigation will spread autonomously as a consequence of successes on contract plots. The overall costs of installation are beyond any individual farmer or community (tube wells may be a possible exception). Thus, in those cases where contracted crops are grown under controlled water irrigation systems, governments frequently play a central role in the construction and maintenance of such systems. Examples include the irrigation system at Jahaly Pacharr (Carney, Volume II) and the Yatta Furrow used by Asian-vegetable farmers in Kenya (Jaffee, Volume II), and vegetable producers in Senegal (Horton, Volume II). Related to this point is the problem of technologies (or remunerative yields) being dependent upon the use of purchased inputs. Unless a reliable supply is present at a reasonable cost, the risk to the farmer of such a technology may be too great. Palmer-Jones (1987) reports that the nonavailability of fertilizer on credit during several years adversely affected the yields of smallholder tea growers in Malawi.

Second, a lesson deriving from several case studies, but largely ignored in the contract-farming literature, is the possibility that low farmer productivity and/or wide variations in yields may result from the encouragement of inappropriate techniques or the provision of poor-quality inputs by the contracting agency. The assumption is frequently made that the technical package and inputs supplied by the contractor are sound, and that results that are lower than expected are caused

by farmer laziness, opportunism, or inability to follow instructions. However, the technical package and inputs should be viewed as a variable, not as a given.³ In the case of Malawi smallholder tea and in several vegetable schemes in Kenya, the planting material provided to farmers has at times been of poor or mixed quality, resulting in poor yields (Palmer-Jones 1987; Jaffee, Volume II). In the case of French beans in Kenya, the technical package that the firm was providing to farmers was not fully appropriate for the local ecological conditions, having been used by the firm in a project in Morocco. This partly explains the very low productivity of contracted farmers in the first two years of the scheme. Farmers planting tree crops under contract must trust that the technical advice provided by the firm is accurate, since several years of effort must be undertaken before the farmer can assess results and obtain a return (see Daddieh, Volume II).

Third, the technology must be consistent with farmer-resource endowments and survival strategies. Technologies that call for intensive use of farm labor such as for weeding, thinning, pest control, and harvesting may be received only reluctantly, or the contract farmer may allocate less labor to the crop than the firm considers "necessary." The visible payoff for some techniques will have to be substantial for farmers to adopt them. Practices that call for pure stands probably will be less widely accepted, as this conflicts with the strategy of multiple cropping, which is widely believed to reduce risk (and increase yields) in the overall farm program. In several case studies, firms did require that farmers plant the contracted crop in pure stands (see Daddieh and Jaffee in Volume II). However, where farm holdings are very small, contract farmers may ignore this requirement.⁴

Fourth, it appears that the best chance for a new technology to spread exists when: (1) there are similar plants in the present or potential farm program; (2) the contract farmer carries out many of the cultivation and post-harvest techniques him/herself; and (3) the techniques are not inherently highly specialized for a single crop. Technological "spillovers" have been seen to occur from contract growing of tobacco, tea, and vegetables (Buch-Hansen and Kieler 1983; Jaffee, Volume II). For each of these crops the farmer carries out most of the production practices, as well as a post-harvest role (e.g., grading, sorting, and/or curing). It has been claimed that some tobacco-cultivation techniques, which approach gardening, have been transferred to vegetables. In western Kenya, the application of compost and fertilizers, as well as the use of ridging techniques for French-bean production, have been applied by farmers on local maize, dry beans, and other vegetable crops. In contrast, the technique of tobacco curing is irrelevant to any other crop, while contract sugar production is often undertaken with the farmer essentially playing a passive role with the exception of

weeding. Mechanized planting and chemical spraying is undertaken by the firm that also hires labor gangs to harvest the crop. Few new techniques are learned by the farmer (Barclay 1977).

One practice that has spread from its origin in the production of cotton under contract (as well as groundnuts) is draft-animal traction, which is widely used for both seedbed preparation and cartage (de Wilde 1967; Sergeant 1981). Indeed, acceptance of the practice and its persistence have been found to be closely linked to the on-farm presence of a cash crop, especially in certain West African states. Unless a farm has a crop for sale, under contract or not, the typical farm finds it difficult to support a team of oxen off season. In this case, contract farming may be directly responsible for the continuing presence of animal traction in certain regions.

Fifth, the cases suggest that illiteracy is not by itself a serious constraint to adoption of a new technology (DAI 1975; Daddieh and Jaffee, Volume II). Indeed, extension agents found illiterate Nigerian farmers at least as receptive as the literate, and more easily directed. It is likely that the vast majority of contract farmers are not functionally literate, or have very limited reading and writing skills. Nevertheless, a large number appear to have learned the necessary techniques to master the new crops. It must be remembered that illiterates have alternate methods of absorbing information. They often have excellent memories. If they are skilled farmers to begin with, they usually grasp the point of demonstrations quickly. Lack of numeracy is a more serious matter, and many farmers have been reported to be misled at times of weighing as to their real earnings.

Sixth, contract firms appear to engage only sporadically in adaptive research, as evidenced by the case studies. In the case of French beans in Kenya, minimal adaptive research was conducted only after the fertilizer and seed package adopted from Morocco proved questionable. The contract-farming scheme received technical assistance both from a Kenyan government research station and the French "parent" company (Jaffee, Volume II). State-of-the-art technology, by definition the cutting edge of knowledge, can only be attempted in any particular locale if considerable and often time-consuming adaptive research is undertaken. The difficulty stems from the inability of an investing firm to benefit sufficiently from research in which it has any proprietary interest to justify investment. Firms depend upon conventional technology supplemented in particular instances with adaptive trials upon which to produce demonstrated technical packages for farmers (Kane 1987).

Public agencies involved in contract farming either undertake crop research themselves or are associated with special research agencies. The tea-development authorities in both Kenya

and Malawi have their own crop research units. Oil-palm research in West Africa is undertaken by special research units, supported by the French. Contracting firms have not always been satisfied with the quality and applicability of research results from government institutes, even though alternative research avenues are not always available. According to French-bean exporters in Senegal, "Research projects conducted by the National Institute of Horticulture in Dakar lack the capabilities to yield specific and timely results of interest to nontraditional farmers" (Rassas 1988:36).

There are few instances, either in the literature or in our field studies, where the initiating company engaged in systematic research prior to launching an outgrower scheme. In most instances, experience from one place was transposed to a new location. French beans, tobacco, tea, and sugar are cases in point. Where government was the leading actor, much the same practice can be observed. In Malawi, for example, when establishing an outgrower tea sector, very little adaptive research appears to have been conducted. Rather, growers were introduced to tried-and-tested methods borrowed from Kenya. State-of-the-art technology was not attempted and, in the case of tea, growers often looked to estates for guidance. The Malawi Tea Authority appeared to depend upon Commonwealth Development Corporation (CDC) to identify problems and to take remedial action (Palmer-Jones 1986).⁵

2.2. Summary

Some limited ground exists in support of the claim that contract farming provides a useful conduit through which farmers receive technical information of more general use than solely in the satisfaction of their contracts. This will most likely occur where a technology is essentially a technique that can be applied to similar crops. An important limitation results from the dependence of many technologies upon purchased inputs. If the contract operation ends, for any reason, and with it reliable supply of fertilizers, chemicals, or irrigation water, then farmers may find it too risky or too costly to continue their use even while they understand the benefits.

Internalization of a technology, initially accepted by the farmer for the purposes of satisfying a contract, will only take place, and will only spread, when: (1) the farmer perceives that a reliable (cash) market for a commodity that requires the technique exists; and (2) the necessary supply of inputs is assured.

3. Extension

3.1. Overview

The case studies demonstrate that in virtually every case, the investor (whether public or private) recognized the vital role that extension has to assume if technologies are to be successfully introduced. In certain African countries, contracting schemes are unable to rely on the existing government-extension services for technology transfer. In such countries as Chad, there is virtually no extension service, except in a few donor-sponsored project areas. In other situations, government extension agents are not able to advise on the production of the particular commodity to be cultivated under the scheme. Even where agents are capable of advising on the crop to be produced, in many cases the agents are too few in number and too poorly trained to provide the support that is required. For example, when the Zaria/Cadbury tomato-paste operation was being established in Nigeria, managers found that the ratio of agents to farmers in the local extension system was 1:2,500; at this rate, if an agent had access to transport and could visit ten farmers per day, he would be able to visit each of his clients exactly once a year. This was clearly insufficient, and the project was thus obliged to establish its own extension system for its tomato producers. Similarly, in Tanzania the national extension ratio was 1:1,500, thus forcing both the BAT/Tumbi and Urambo/GOT tobacco schemes to establish their own extension systems.

Many of the smaller companies lack the financial resources to provide any kind of private extension support to participating farmers. These firms lack the initial investment and working capital to train agents or support field training and supervision activities for farmers; thus they are restricted to the contracting of commodities with which the farmers have had previous experience. Yet when a pool of experienced farmers is combined with an established market, as in the case of the Senegalese horticultural sector, the companies often face a highly competitive situation with easy firm entry, and as a result, low margins. The low profitability of the activities restricts the firms from accumulating enough capital to introduce, at a subsequent time, new activities which would require extension support. This is the situation for several of the Senegalese green-bean exporters, who depend heavily on government extension with some degree of success. Despite its deficiencies, the government extension service in Senegal "plays a major role in stimulating the adoption of contract crops" (Rassas 1988:36). Among a sample of 87 contracted French-bean growers, the study finds that 86 percent received technical advice from government extension agents.

Some of the smaller private firms with sufficient initial capital do establish their own limited extension services and rely on existing government services to supplement their efforts. For example, the Sidiki Sow company in Mali provides, in their own words, "some advice" to their 682 contracted farmers beyond the contract specifications of planting and harvesting dates, and encourages the farmers to seek the assistance of government extension agents as well.⁶

Ventures that lack access to a pool of farmers experienced in the particular crop to be produced, with the financial resources to train and equip an extension staff, and that are involved in products with relatively high margins, do find it necessary and cost-effective to establish their own private extension systems. The intensity of these systems varies, of course, partly according to the complexity of the desired cultivation practices, as well as the extent to which the new crops and agricultural packages differ from the farmers' previous experience. However, in the schemes for which we have precise data, the extension systems that are required for the contracted activities are relatively intense. The schemes that are considered to be more successful show extension ratios for inexperienced farmers of 1:150 or less. Further, evaluations that are available for several of these projects explicitly attribute much of the success of the schemes to the intense extension ratios. For example, the BAT/Kenya tobacco scheme has a 1:50 ratio, while the KTDA has a 1:120 ratio; in both cases the ratio for farmers outside these schemes, 1:500, was judged to be insufficient. Similarly, in Tanzania, the Tumbi/BAT venture initially showed a 1:116 ratio, while a much less successful government-run tobacco scheme, Urambo, had a 1:323 ratio. As Uma Lele reports, the much lower yields at the Urambo scheme, and the resultant problems, are often attributed to a shortage of extension staff (Lele 1975). The extension ratios for the contracting schemes for which precise data are available are outlined in Table 7.1.

Clearly the need for relatively intense extension support is greatest in the early years of a project, when farmers are learning new skills, technological packages are receiving final tests and adaptations, and when other staff and farmer incentive/control systems are being tested and adapted. The Njoro French-bean cannery in Kenya was able to reduce its extension ratio from 1:100 to 1:200 after two years of operations; the Tumbi/BAT scheme reduced its coverage from 1:116 to 1:575 over the period from 1965 to 1970; and SOTOCO/Togo reduced its ratio from 1:50 to 1:75 from 1983 to 1987.

However, even after farmers are experienced in new skills, a relatively intense extension system is seen as a useful mechanism to assure farmer adherence to desired practices and to control possible crop leakage. As Shipton (1985) wrote of the BAT/Kenya

Table 7.1

Extension Ratios of Contracting Schemes

Ratio of Agents to Farmers

Scheme	Country	Commodity	Scheme Extension Ratio
BAT	Kenya	Tobacco	1:50
SOTOCO	Togo	Cotton	1:75 (1983) 1:90 (1986) 1:150 (1987)
CIDT	Cote d'Ivoire	Cotton	1:80
SOCAPALM	Cameroon	Oil Palm	1:80
Njoro Cannery	Kenya	French Beans	1:100 (1st 2 years) 1:150 (third year) 1:200 (subsequent years)
Sidiki Sow	Mali	French Beans	approx. 1:113
KTDA	Kenya	Tea	1:120
Tumbi/BAT	Tanzania	Tobacco	1:116 (1965) 1:575 (1970)
Urambo (GOT)	Tanzania	Tobacco	1:323 (1965) ¹ 1:802 (1970) ¹
CMDT	Mali	Cotton	1:175
NTC/BAT	Nigeria	Tobacco	1:200
Jahaly Pacharr	Gambia	Rice	1:290
SOFITEX	Burkina Faso	Cotton	1:400 ²

¹ Ratios considered by analysts to be insufficient; one reason for scheme difficulties.

² 1987 ratio; scheme includes extremely experienced farmers with low extension needs.

system, "the BAT extension agents, arriving at each farm fortnightly, gave farmers little need to experiment on their own. They also gave them little leeway for agok market dodges: through them, the company knew how much tobacco to expect from each grower."

Frequently companies choose to organize participating farmers into groups in order to facilitate the delivery of extension services, as well as inputs, and to minimize the cost of these deliveries. For example, in the Jahaly Pacharr rice scheme in The Gambia, farmers are organized into groups of twenty. Their elected representatives serve as contact people who are responsible for informing farmers about such issues as the dates for training sessions on cultivation practices or irrigation-equipment operations.

The cost of the extension support provided by contracting companies varies considerably according to such factors as the experience and skills of the farmers, the complexity of the commodity production/harvesting process and the agricultural package, the amount of training given to agents, and the location of the farmers (if producing areas are dispersed, with inferior road systems, the greatest cost may be the staff time required to travel to and within the areas; further, expensive vehicles, such as land rovers, may be required). Precise data concerning these extension costs were available for only two of the cases that we examined, KTDA and the Haggard tobacco operations. For KTDA, annual extension costs have averaged about \$18 per farmer (a total of \$2.61 million per year for the 145,000 participating farmers) (Lele 1975). For the Haggard scheme, which included approximately 2343 farmers in 1983, the cost was \$81, or a total of \$203,252 (Karen 1985).

The most essential aspects of an extension system are, of course, the quality of the support provided and the frequency with which it is given. In most cases, companies are unable to hire qualified agents without providing additional training; many of the larger schemes have formal training programs, while the smaller companies generally provide on-the-job training. For example, the agent training for the Nigeria Tobacco Company/BAT venture included not only technical materials, but a trial period in a remote village setting, to assure the agent's ability to handle such conditions. There are little precise data on the actual frequency of extension visits in the schemes reviewed. One company for which there were data, NTC, with an extension ratio of 1:200, was able to assure that all farmers would be visited once a week during the most critical seasons of harvesting, curing, and grading (DAI 1975). (NTC is discussed further in section 3.1.3.1.)

3.2. Differences between contract and public extension systems

As indicated above, contract extension systems may be built upon private agents, who are hired specifically for the project and given crop- and project-specific training. Alternatively, extension agents may be seconded from national public extension services and provided with the necessary retraining. Since many contract-farming schemes in Africa do utilize public extension agents, it is inappropriate to contrast "private" with "public" extension systems, associating the former with contract farming and the latter with national crop-promotion campaigns. Any comparisons made should be between targeted contract extension systems and general public extension systems. We will refer to the two systems as "contract extension" and "public extension," although with the recognition that contract extension systems may involve private or government extension agents.

The case studies and the wider literature on agricultural extension in Africa suggest that there are a number of differences between national public extension services and contract extension systems. First, public extension on the whole has lacked well- designed and tested packages of improvement.⁷ Although private contracting firms are reluctant to invest in research, they are able, in principle, to select from an array of experiences to find the one most suited to a situation. The private firm is in a position to maximize the farmers' opportunity for profit--if the technology is appropriate and the farmer an apt pupil--since it controls the prices of both purchased inputs and the final product.⁸ Where the private firm is recommending a technical package that is not fully appropriate, this is likely to be quickly identified and adjustments can be made.⁹

Second, related to the lack of well- designed and tested packages, is the failure, for the most part, of public extension systems in Africa to train extension agents to provide real management services to the farmer. Instead, they are expected to merely communicate a particular ministry-approved message to as many farmers as possible. In particular instances, these agents have been disciplined for going beyond prescribed work guidelines.¹⁰ Extension agents are virtually never trained in basic farm-management tools, so that in practice they have little to offer a farmer faced with a problem unique to his own situation. On the other hand, the contract agent comes to know his subject, and frequently also specific farmers, very well. This agent may be in a better position to help his clients. Of course, this depends on the intensity of supervision needed for the contracted crop. Where extension agent-farmer visits are frequent, there is potential for wider farm-management advice. However, in some contract schemes, extension agents are directed to merely communicate the contractor-approved message and then report back

to the firm on the farmer implementation of this message. Agents are not encouraged to provide more general support.¹¹

Third, public extension must address and be sensitive to a variety of public concerns beyond, and likely far afield from, crop production. The agent may be called upon to participate in various community-development activities, and be a local representative on behalf of the central government, which detracts from the effectiveness of the extension activity. In some African countries the agent may be (additionally) a tax collector, enforcer for required crops, and collector of credit debts. All of this is in addition to responsibility for a wide variety of crops, and the public agent is unlikely to be specifically expert in any of these. The contract extension agent, on the other hand, has a more focused agenda, dominated by the objective of promoting a single crop. This objective, however, may require multiple activities on the part of the agent. The agent may be involved in farmer recruitment, input distribution, production monitoring and advice, monitoring of crop collection, and collection of debts.¹²

Fourth, as a public service, government extension must cover large geographic areas, which may contain substantial populations. Because extension services typically lack funds, staffs are small and agent-farmer ratios are very large. Rates of 1:1000 - 2000 and above are commonplace (in contrast to the ratios of contract extension systems, Table 7.1). In The Gambia, extension agents not assigned to Jahaly Pacharr are virtually nonfunctional. There are no funds available in the recurrent budget to provide transportation and travel expenses. This situation is common, to a greater or lesser degree, throughout Africa. On the other hand, contract extension, because it deals with a single crop, can concentrate a group of agents upon a relatively few farmers and in a small area. Ratios as low as 1:50 are reported and 1:200 are routine (see Daddieh and Jaffee in Volume II; and Table 7.1). During periods of short-term expansion, these ratios may be higher and constrain the effectiveness of contract extension.

Fifth, public extension is often concerned with reaching a wide number of farmers from all social strata, whether they be rich/poor or good/bad farm managers. Consequently, much time is spent by busy agents on farmers who may not be interested in or able to use the technical information offered (assuming it is relevant and profitable in the first place). The contract agent, however, is frequently assigned to a specific group of farmers for whom s/he is responsible. Farmers are selected for participation by the firm or parastatal based on a series of stated criteria. Passing such criteria suggests that the farmer is able to follow the firm's technical message.

Sixth, as noted earlier, new technologies, such as those dependent upon fertilizer, are of no value unless supplies are available when needed. Public extension may have little or no control over the supply of inputs to farmers. Inputs and credit may be the responsibility of a cooperative or a parastatal. Contract firms and organizations have a vested interest in making supplies available when they are needed, and extension personnel are often used as a part of the supply channel. The extension agent also can be used as a loan officer by the company in the provision of credit. In this position s/he can bring expert knowledge of the farm and its operator to an evaluation of creditworthiness.

Seventh, public extension lacks objective measures of success while many subjective measures, which have little or no connection with farm-level success, are often applied.¹³ In contrast, the contract extension effort must quickly produce a product of acceptable quality. If production fails, changes can be made in personnel or method, depending upon the perceived problem. In some cases, the efforts of individual agents can be monitored and the results measured, and incentive pay can be directly linked to work. In many contract schemes, records are kept that allow at least an indirect linkage to be made between farm production and quality and a particular extension agent. Of course, exogenous variables, such as weather or the quality of inputs, will affect farmer performance, with this limiting the degree of linkage between farmer performance and extension agent incentive pay. However, poor performances must be explained and corrected. Where contract extension performance is poor, private agents may lose their jobs, while public agents, on secondment from national extension services, will be transferred to less favorable positions with poorer working conditions.

Eighth, even where agent:kilometer ratios are high, it is only the exceptional public agent who has access to personal transportation and fuel that can visit surrounding farmers. Lacking this, the public agent must wait for public transportation and then walk to the final destination. Unless farmers are grouped closely together, the agent's ability to service any single farmer with a degree of intensity is very limited. The contract extension service has every incentive to provide transportation and other support. It is clearly worthwhile for the contract service to supply motorcycles or other vehicles to agents who must cover relatively large areas. Because these jobs are prized, well-paid, and closely supervised, agents are less likely to misuse transportation.

3.3. Variety and organization of extension systems associated with contract-farming schemes

Several approaches to contract extension can be identified. First are those where the existing government extension service

is pressed into the job. The best examples of those are to be found in The Gambia (Jahaly Pacharr rice) and Malawi (tea). The second is a case where a mixed public-private extension program was attempted, the Zaria tomato scheme in Nigeria. Third, and most numerous, are cases where dedicated systems, both public and contract, were put into place. These cases are taken from Kenya, Ivory Coast, and Nigeria. A special case from Senegal is included, where small-scale private dedicated systems operate.

3.3.1. Contract farming-support provided by the regular extension service

Where government is the primary implementing authority, public extension services may be directly employed. Cases in point include the Jahaly Pacharr irrigated-rice scheme in The Gambia and the Malawi smallholder tea authority. This type of project is almost always donor supported and consequently includes important external assistance to extension, which the scheme would not otherwise have. An example of this is the oil-palm industry in Ghana where the IBRD, as the donor agency, supports what is virtually a separate system for the life of the project. Special training is usually provided to the agents, together with technical assistance to the service as a whole. An operating budget is also provided, so that the agents may get their salaries on time, and they are provided with transportation and other support. Unfortunately, all of this comes to an end when external funding is exhausted. No case study examines a public contract-farming scheme five or ten years after the formal end-of-project, but experience elsewhere permits some generalization. When the funding stops, the extension reverts to normal, which in most cases means that little beyond salaries is provided. The effect of this upon contract production has not been documented, but is likely to be detrimental.

In both of the cited case studies, extension agents from the national system were assigned to work with the scheme. In The Gambia, agents were trained in rice production under conditions of centralized water management, which permits multiple cropping and requires the use of fertilizers and chemicals. Farmers, who gained access to irrigation perimeters through membership in a settlement scheme, had almost no independent managerial authority over rice culture and were thus very dependent upon extension guidance (Carney, Volume II).

The Smallholder Tea Authority (STA) in Malawi, on the other hand, makes full use of the national extension service (Palmer-Jones 1987). Extension functions as part of what is effectively a unidirectional information system--one that delivers directives downward to farmers but does not systematically relay farmers' viewpoints upward. The extension service supervises the growing of tea. Workers meet with individual farmers, operate demonstration plots, and hold field days. Lectures are given at

the plots. A monthly newsletter is published (in Chichewa and English), which provides technical information in addition to company exhortations.

3.3.2. Mixed public/contract extension

Nigeria provides an interesting case where a mixed public/private extension system was attempted in a single project. Nigerian farmers were already familiar with tomato culture when the Zaria tomato scheme was undertaken as a joint scheme by the Ministry of Agriculture (MOA) and Cadbury Ltd. (DAI, 1975). The principal novel dimension was the supply of irrigation water and the need for regular chemical spraying. Also, farmers were required by contract to use recommended doses of fertilizer. The scheme depended upon the MOA to provide both inputs and extension support. In practice, the ministry proved unable to supply either effective extension agents or inputs on time. The caliber, supervision, support, and motivation of agents were found to be severely lacking. Inputs, especially fertilizer, appeared in inadequate amounts too late for planting, allegedly due to bureaucratic difficulties in procurement. For example, the necessary money may not have been allocated on time.

To save the project, Cadbury Ltd. had to supplement the public effort, which it did to the point of virtually taking over all extension responsibilities. Cadbury built up its own extension service, drawing upon the same pool of recruits as the ministry--graduates of agricultural colleges and advanced technical schools. Although its quality and basic training were similar, Cadbury paid higher salaries and provided transportation to its workers. Close supervision was maintained and the agent-farmer ratio was intensified from the Nigerian average of 1:2500 to 1:100.¹⁴ The agents visited each farm every two weeks (at least during critical growing periods). Despite the presence of a large extension force, the scheme has not been able to significantly reduce the leakage of commodities into the open market, which pays considerably more than the scheme's price. The company had to take over the provision of inputs as well. In time, the ministry's role was cut back to a point that it could sustain, which was little more than general support and facilitation of documentation.

How much of the weakness in the public system is unique to Nigeria, rather than inherent in the system, is a matter of judgment. Similar problems have been found in other African countries, especially regarding weak staff and inadequate budgets.

3.3.3. Dedicated extension support (contract and public)

3.3.3.1. Nigeria

Nigeria has seen successful contract-farming extension efforts as well. A more effective overall system has been put in place by the Nigerian Tobacco Company (NTC), in the former Western Region of the country (DAI 1975). This is a case where focused extension of a complex technology has created a group of successful farmers.¹⁵ The effectiveness of the extension effort is largely the result of better salaries and incentives than offered by comparable government positions. Agents are recruited from a large pool of students who have two to four years of college or advanced technical training in the Ibadan Technical School.

An important part of the agent's training--and screening--involves placement in a remote village without water or electricity. According to the NTC, living under the same conditions as farm families for an extended period increases the extension agent's understanding of farm constraints. The remainder of the training takes place on the job under the strict supervision of senior instructors. NTC agents, called leaf instructors, are provided with transportation, housing, and overtime compensation.

In this program, the agent-farmer ratio is 1:200. Farmers may opt for a formal six-month training course or on-the-farm instruction, both provided by the service. Agents hold regular farmer meetings and provide close monitoring during harvesting, curing, and grading. Instructors visit barn sites weekly. In addition, there are several quality checks on agents. Each must make a regular report on his group. The NTC divisional office keeps track of the quality of leaf produced by each group, and senior leaf instructors meet with the heads of producer groups monthly (so the system also provides effective two-way communication). At the curing centers, mistakes in curing and grading are uncovered and remedial steps are taken.

3.3.3.2. Kenya

The British American Tobacco Company/Nigeria Tobacco Company model of dedicated/intensive extension can be found in a number of countries and in association with many commodities. Some of these are public-sector operations, which demonstrate that with the proper scope, public employees can perform as well as private employees. The Kenya Tea Development Authority (KTDA) is a case in point.

The KTDA has become the leading tea producer in Kenya, coordinating the production of 150,414 smallholder growers. Its

success is the result of a well-tested technical package, effective incentives to producers, intense and qualified extension support, and effective two-way communication among all segments of the operation (DAI 1975).

The field-staff agents are seconded from the Ministry of Agriculture to KTDA.¹⁶ These agents are of two sorts--the more senior ones who have certificates in agriculture, and the junior ones who have completed seven years of primary schooling. They are in a ratio of one to four respectively. All agents receive four weeks of specialized training. Actual extension work is carried out under the supervision of one of the ten direct-hire tea officers, who hold diplomas in agriculture.

New growers receive intensive training, either at training centers or in the fields. About 1,000 farmers are trained annually. The program at the center, which costs the equivalent of one US dollar to attend, is one week long. In the field, the extension agent conducts 18 training sessions of 1 1/2 hours each (27 hours in all). Each session concentrates on a different aspect of cultivation, and is taught at the point in the growing season when it is relevant to the field operations.

The average farm is visited five times annually. At each visit the agent must evaluate the procedures used on the farm. Findings are summarized on a card and these are used as a means to monitor progress in subsequent visits. In 1982, the extension staff to farmer ratio was 1:170 (Buch-Hansen et al., 1982).

Well-attended field days are held at which the best tea growers are recognized (at division, district, province, and national levels). Senior KTDA officials attend these sessions that are important sources of informal feedback.

The British American Tobacco Company (BAT) attempted a similar model with its Kenyan contract farmers in the 1960s (Shipton 1985), but subsequently shifted over to its own service in the 1970s. In so doing it was able to increase extension intensity five-fold, provide the agents with motorcycles, and improve the quality of both training and supervision. In 1985, the agent-farmer ratio was 1:50. Agents are expected to visit each farm every fortnight, at which time remarks are entered in a notebook, which can be checked. They are also expected to provide continuous production estimates during the growing season of each outgrower's field, to help ensure that BAT secure close to 100 percent of the yield, and to discourage sales to local merchants.

Another Kenyan contractor, Hortiequip, has had a mixed experience with its extension program for French beans (Jaffee, Volume II). The company has developed an extension and input supply system based on 60 to 80 "control clerks" who link the

company to some 12,000 to 16,000 smallholder farmers. The clerk is responsible for the recruitment and registration of farmers, the allocation of seed and fertilizer, the supervision of chemical spraying, and the supervision of production and crop collection. Each control clerk is responsible for 200 farmers (plus or minus 50).

Generally, the control clerk has had some secondary education, has no past record of crime, and has been recommended by a local political notable. Most control clerks go through at least two seasons with the company working in a position of lower responsibility before being appointed as a control clerk. Many act as chemical sprayers during this trial period. Trainees are then given instruction in bean production and learn some basic plant pathology. The clerks instruct farmers in land preparation, planting, and cultivation. Fields are inspected before seed is issued. Farmers are told when to plant, apply fertilizer, spray, and begin harvesting. Although clerks are expected to pass important information upward, they are not expected to act as surrogate farmer representatives.

As a result of their close and continuing exposure to the control clerks, contracted French-bean growers have learned how to make more effective use of extension agents generally. Experience with company agents has taught some farmers how to ask for advice. This is especially true for women farmers. The public extension agents had traditionally avoided farms operated by women out of deference for, or fear of, absent husbands; the majority of farms operated by women never see an extension agent at all. In this project, women attended demonstrations and their farms received equal attention by the control clerks, some of whom are themselves women.

Because control clerks are often well connected, the company has found discipline difficult to enforce. This became a particular problem when cases of impropriety were detected in the reporting of farm deliveries--the company found itself paying for nonexistent beans. A more refined staff-monitoring system was installed in order to reduce the incidence of staff opportunism.

A number of contract-farming schemes in Kenyan horticulture have actually made use of local farmers as extension agents. During the late 1960s, impressive gains were made in expanding smallholder passion-fruit production in the Kisii area utilizing an extension service based on locally appointed "farmer leaders." The farmer leaders were themselves contract farmers, but were responsible for passing on technical advice from the Horticultural Crops Development Authority to the group of farmers that they represented. Another case in which farmers are used as extension agents is the contracting of vegetables for seed by the firm Hortitech in Busia, Western Province. Hortitech has selected some of its most successful seed producers and assigned

them to act as advisers to farmers in particular subareas. In both cases, the farmers-cum-extension agents play a key role as information conduits between the contractor and farmers (Jaffee 1986).

3.3.3.3. Ivory Coast

In one country, Ivory Coast, the public sector has provided dedicated extension support in quite another way. In the absence of well-established extension services, governments of francophone countries have turned to private French firms on the basis of contractual arrangements. A number of commodity-specific arrangements have grown up between projects that aim to develop a particular commodity and their supporting French company. These firms provide a wide range of technical personnel in what are typically long-term relationships. Ivory Coast has created an extensive network of dedicated extension arms, each linked to a particular product. In turn, these may be linked to a national crop-specific research institution that can draw upon substantial French support (ORSTOM and various French contract firms).

In SODEPALM the Ivory Coast government has established an important import-substitution industry in palm-oil production (based on small farmer outgrowers) with its own extension arm. The company hires its own extension agents who are trained in the technology. Producers live in a quasi-plantation situation, being clustered relatively close to mills that process the palm kernels. They are physically linked by a network of feeder roads to these centers, and also to major highways. Agents have little difficulty in reaching their clients.

The producer contract stipulates that assistance will include technical support, the securing of financial aid and loans, and collection of the harvest, in addition to the supply of inputs. Farmers agree in the contract to follow the agents' instructions in cultivation, including clear rules forbidding interculture under the trees that are enforced by the agents. In practice, most Ivorian farmers are generally familiar with palm-oil culture, and the extension adds rigor and method to what has been a relatively casual husbandry.

According to Daddieh (Volume II), most farmers comply with the rules and regulations, as enforced by extension agents:

All indications are that contracting smallholders have generally complied with these regulations, especially during the early stages of planting, because that is when the parastatal can exercise the greatest leverage. Smallholders need the hybrid seedlings for planting that can only be obtained from the company. Smallholders also depend on the subsidy and cash advanced by the state and disbursed by the

company in order to establish their farms. Without this financial support by the state, most peasants would not have been in a position to participate in the oil-palm program (interviews in Abidjan) (1987:330).

SODEPALM provides very intensive supervision and inputs at almost every stage of production. Oil-palm farmers function in a controlled world in which many services are provided (often supported by extension) in return for close adherence to the rules. Extension agents of SODEPALM even do the initial spacing and layout of the fields, as well as provide the grillwork for the trees. Implicitly, extension plays a police role in such an environment.

3.3.4. Small-scale private extension

3.3.4.1. Senegal

Senegal's extension service is oriented toward staple-food production and livestock. In the mid-1970s, USAID supported a poultry-training program operated by the extension service directed toward poultrymen. Senegal has been unable to sustain much of the infrastructure since the formal end of the project, and it is effectively moribund. Nevertheless, a large number of the present-day operators attribute their basic technical knowledge to this effort, which came to an end with the termination of the project. No significant extension support of poultry persists at the present time; nor is there a significant presence of contract farming in the sector (Billings, Volume II).

However, contract farming does flourish in the vegetable-export trade. Senegal has become a regular exporter of fresh vegetables to the EEC (Horton, Volume II). In the early 1970s Bud-Senegal, a multinational corporation, invested funds for large-scale, irrigated production of vegetables for the export market. Although this scheme no longer exists, the concept continues to be exploited by as many as ten small Senegalese export firms that sell vegetables, grown locally under contract, to European markets. The firms themselves do not directly engage the farmers or provide technical support. Extension assistance is done by an intermediary, the chef du groupement, who takes a production contract from a firm and then gathers producers who will actually grow vegetables. The "chef" gives technical advice and some inputs, and assists the buyer in final assembly.

4. Summary

Extension, says de Wilde (1967), can be of vital importance once it is demonstrated that new factors and methods of production can be efficiently combined to give the farmer a significant increase in production by means that are within

his/her command. Extension, in the service of a contract-production scheme, can be an effective means by which complex or novel technologies are introduced to farmers.

The probability of an extension effort being successful is in large measure a function of how much is expected from a particular effort. If the objective is narrow, the technical package is viable, and other support is available, a properly prepared extension effort will most likely deliver the goods. Because many private contract schemes hew closely to these strictures, their efforts have usually been successful--if success is narrowly defined as getting production in return for extension effort. Contract-supported extension, which is expensive, can only be justified by a clear return to effort and it should be limited to relatively few commodities. To the extent that contract farming becomes enmeshed with public schemes that have more than production as their objective, the likelihood of success will be proportionately diminished.

Contract farming can be a useful tool in rural development, where the development objective is limited to a tangible, measurable product. Contract-supported extension, which is expensive, can only be justified by a clear return on the effort. Contract farming--to the extent that its success is dependent upon extension--is likely to remain a vehicle of rural development, where its utility is limited to the production of relatively few commodities.

Endnotes

1. In using the word "dedicated," not commonly seen in the literature, debt is incurred with the vocabulary of computer science. The meaning is that such a service is focused only on a particular goal.
2. Examples include cases not necessarily including a contract-farming dimension. The issue is whether concentrated extension can affect farmers in desired directions. A good case is that of India. Intensive agricultural-development programs were attempted in selected districts, with double the normal extension input. Little happened until (1) better technologies were available, (e.g. HYV) and (2) sufficient prices were implemented.
3. The company deliberately seeks areas sufficiently similar in rainfall, soil, altitude, temperature, and/or drainage that it can proceed with some a priori confidence as to the adaptability of a basic production package. Nevertheless, problems of adaptability frequently do occur.
4. Obviously, it is far less problematic in terms of quality control to have a smallholder French- bean farmer interplant a few banana trees with her crop than for a contract farmer of vegetables for seed to interplant her crop.
5. An exception to this pattern is the case of Mumias sugar. Booker McConnell, while conducting a feasibility study for the Kenyan government, carried out a large number of field trials and demonstration plots over a three-year period before the initiation of an outgrower scheme. Thirty-five demonstration plots were built up to test yield responses to inputs and possible output variations in different areas (Allen 1983).
6. Christopher Mock's interview with Sidiki Sow, Bamako, Mali, in April 1987.
7. Public extension in Africa has in recent years focused upon staple-food crops, which are often grown under conditions of moisture stress without modern inputs. Crop research has not been directed to this class of crops until fairly recently. Consequently, public extension has not had much to offer farmers (see Eicher 1982 for a good review of this history).
8. This condition is relaxed in those cases where the public partner has set a procurement price subject to some other criteria. A good example is that of sugar in Kenya, where the final price was kept fixed for years. Producer prices were kept correspondingly low. The private partner was not directly affected because it was involved through a management contract with the government of Kenya.

9. As noted earlier, public agencies involved in contract farming sometimes engage in crop-specific research related to planting material and husbandry practices.

10. Bingen reports that agents in the Segou-Mopti rice projects in Mali who strayed beyond narrowly defined guidelines when working with farmers, providing anything apart from very strict guidance to them, were disciplined.

11. There are a few important exceptions to this. For example, in Zambia, LINTCO, a commodity-specific parastatal that is involved in contract-farming arrangements, has recently been assisting the Ministry of Agriculture in its general extension programs. Although its official mandate is to work strictly with cotton producers, the Ministry of Agriculture has contracted LINTCO to provide extension services to soybean and, in some cases, maize growers (Peter Little, personal communication).

12. Some contract extension agents may also seek to obtain for themselves the position as a sort of "representative" for the farmers in cases where cooperatives or other intermediaries do not exist between the firm and farmers.

13. The public extension agent is likely to be judged by the quality of his paperwork and certainly by the rigor of his adherence to rules. Rules are more often than not a reflection of administrative convenience, overall consistency with government practices, or politically determined judgments to obtain certain results--none of which may be relevant to and may be inconsistent with the realization of a crop-production objective. Almost nowhere in Africa are statistics collected or other measures attempted that would allow some relationship to be made between extension effort and changed farm production.

14. This may not be entirely fair to the government system. The literature does not indicate whether the ministry increased the normal extension cadre on behalf of the project. It is clear that whatever was managed was much less intense than subsequently applied by Cadbury.

15. There are two groups of tobacco farmers (see earlier discussion). One, the unit of flue cure producers (FCP), which may include up to 300 persons who are not related, but work together to produce cured leaf. The unit is registered as a co-op and operates its own curing barns. The second type is farm-family units (FFU) comprised of kinsmen, operating six acres of tobacco and curing barns.

16. In 1975, 792 senior and junior extension agents were on secondment. KTDA reimburses the ministry for their cost.

CHAPTER VIII

TOWARD A DEVELOPMENT STRATEGY FOR CONTRACT FARMING

The current agrarian and economic crisis in Africa finds donors scrambling for new approaches and policies for developing the continent. Contract farming is appealing because in the African context it is relatively novel, and because it seems consistent with much of the current donor thinking on development strategies for Africa. These strategies include greater emphasis on nongovernment institutions, income and employment generation, economic growth, and technology transfer. This study finds that contract farming can make important contributions to each of these objectives, but it also reveals that several modifications are needed if it is to meet many important objectives, including local and regional development, food security, and the development of sustainable local institutions. Contract farming does have a niche in the development environment of Africa, but it should not be perceived as a panacea for solving all of Africa's agrarian and rural development problems. Many contract-farming schemes are oriented toward strictly commercial goals rather than toward development objectives. While the two are not necessarily antagonistic, neither are they necessarily complementary. To serve development purposes, contract farming must be conducted in ways complementary to larger development strategies.

1. Enhancing Regional Development and Economic Multipliers

As noted in Chapter V, contract-farming schemes--in regional multiplier terms--have not achieved what would seem possible given the amount of revenue involved. In many cases, they have been organized as enclave-type enterprises, maintaining very poor linkages with regional services and markets. Several scenarios are available to AID to improve the local and regional development impacts of contract-farming schemes. These include ensuring that:

- locally available services and inputs are used wherever possible;
- local transport companies and market facilities are used as much as possible;
- contract-farming schemes do not establish services and retail activities that directly compete with local businesses;

- at least some commodities with local and regional markets (e.g., foodstuffs) are allowed to be produced;
- efforts are made to locate processing facilities in the region;
- priority for employment (both unskilled and management) is given to local residents, and that training is provided for indigenous managers, to ensure that positions held by expatriates are eventually assumed by Africans; and
- contract-farming schemes make investments in physical infrastructure (e.g., roads and water) and social services (e.g., health and education facilities) on the larger schemes.

These factors are not sufficient conditions for assuring positive development impacts of contract-farming schemes, but they would considerably improve the chances for regional multipliers to occur.

2. Contract Farming as a Tool for Developing Remote Regions

Considerable potential exists for utilizing contract farming to develop relatively poor and remote regions, if the measures (listed above) are used to ensure strong, beneficial linkages between the scheme and the regional economy. Remote regions have the advantages that:

- the contract can be used to ensure access to inputs and markets, access typically lacking in such areas;
- labor costs are likely to be lower in more remote regions because competing employment opportunities are fewer;
- problems of market leakage, which can jeopardize a contracting scheme, are likely to be less severe in remote regions;
- the injection of cash from contract farming may have more significant impacts in these areas than in more prosperous regions; and
- remote regions usually experience greater difficulties in producing high-value crops because of market risks, and these could be decreased through the use of contracts.

Several of the case studies examine contract farming in remote regions. In these areas, they find that it is an appropriate mechanism for ensuring farmer access to inputs and markets, but that alone it is not sufficient to catalyze a

process of regional development. It does inject considerable cash and employment in areas where income-earning opportunities are minimal, but, again, efforts to integrate schemes more closely with regional economies are not forthcoming. Here AID and other donors could play an important role in financing supplemental investments in market infrastructure, roads, and services, to ensure greater regional multipliers from contract-farming investments. Where AID is financing or cofinancing a contract farming scheme, such as the OCAF (Oil Crops and Allied Foods) oil seed program in Kenya, it could require that locally based services, inputs, and industries be utilized by the scheme as far as practical.

AID is working in many remote regions of African states-- such as the middle and upper Senegal Valleys--where farm incomes and opportunities are very low, and where contract farming may prove a viable development investment. Contract farming in these areas might be the only mechanism to incorporate new, high-value crops into existing farming systems, and thus raise on-farm incomes.

3. Support for Local Organizations

A major reason why contract-farming schemes have not had greater regional and local impacts is the almost complete absence of local organizations associated with these schemes (see Table 5.1, Chapter 5). The study finds that the weakest institutional link on contract-farming schemes has been the lack of representative farmer organizations. Farmer organizations that are found on contract-farming schemes have virtually no autonomy in decision making and serve mainly as "conduits" to distribute inputs and deliver information from scheme management. Where farmers lack institutional mechanisms for expressing grievances to scheme management, they may be forced to seek political solutions. In western Kenya, one of the case studies shows the "politicization" of a local vegetable scheme, where growers without effective participatory organizations took their grievances to local politicians (for other cases of this, see Final Report, Volume II). In contract farming situations where strong local farmer organizations have existed (e.g., Kenya Tea Development Authority Scheme, the Kibirigwe Irrigation Scheme in Kenya, and the Ghana Oil Palm Development Corporation), farmers have been able to influence scheme policy, to see that they have investment shares in local processing facilities, and in some cases to negotiate fees and prices for producers.

AID policy recognizes the vital role that local institutions play in the development process (AID 1983). In considering a development strategy for contract farming, AID should provide for the support of local organizations. While contracting firms (public, private, or hybrid public/private) may resist the

formation of local organizations,¹ it is really in both the firm's and producers' long-term interests to avoid potential conflict situations. The use of local organizations on contracting schemes has been shown to reduce input delivery and marketing costs, thereby increasing overall revenues for the scheme (see Rassas 1988). Private voluntary organizations (PVOs) have been utilized on some of the smaller contracting schemes, and AID could use their expertise to help establish local institutions.

4. The Role of the Public and Private Sectors: Support for Mixed Public/Private Schemes

In terms of a policy for private-sector development, AID should approach contract farming with caution. The findings of the study show that government plays an important role in converting contracting schemes from strictly business ventures to vehicles for local and regional development. In the oil-palm industry of Ghana, for example, the state has encouraged privately managed contract-farming schemes to invest in social and physical infrastructure and to allow farmers to form local participatory organizations. The Ghanaian government required the Unilever Africa Company to include an outgrower component to its nucleus estates, and to provide some social services to farmers.² Since there is a tendency for many firms to prefer to deal with larger farmers and estates, government initiative often is required to insure that smallholders are included in contract-farming schemes. It should be noted that the Kenya Tea Development Authority (KTDA) and the Malawi Smallholder Tea Authority were initiated by governments (with donor and CDC funding) under strong protest from private firms and estates. Today these smallholder schemes contribute significantly to overall tea production in the countries, especially in Kenya, and supply many privately owned processing factories. It is doubtful these schemes would have been established in the absence of government support.

Findings on the organization of contract-farming schemes suggest that a crude dichotomy between public and private sectors is not appropriate and may hinder the formulation of a viable development strategy for contract farming. Many contract-farming schemes are institutional hybrids featuring both public and private ownership and/or management. Schemes with virtually complete public-sector ownership may be managed by private firms; this is particularly common on many of the larger outgrower schemes. Conversely, privately-owned and managed schemes may depend on public-sector extension and research as well as on public provision of important infrastructure. Thus, a development strategy restricted only to private-sector undertakings misinterprets the important role that the state has played in most contract-farming efforts.

In terms of management, private firms do seem to have certain advantages over government organizations in managing contract farming firms, and are likely to be more efficient in meeting production schedules, disseminating inputs to farmers, maintaining processing facilities, and providing market services. An increasingly common pattern is for the state to contract out the management of its estates and outgrower schemes to private firms, but for the government to maintain a role to insure that farmers benefit, that appropriate organizations are formed, that infrastructure and services are provided, and that local managers are included. Regarding the latter point, evidence from Kenya suggests that joint state/private ventures are more successful than strictly private/multinational enterprises in training local personnel:

At the very minimum, any discussion of the role played by foreign owned and operated firms in training local managers must distinguish between those firms which operate with and without the government of the host country holding an equity position in the multinational enterprise. According to the analysis, only the former, what have been referred to here as joint venture firms, have made a truly significant contribution to the training of indigenous management. Also, in comparison to publicly owned firms, those enterprises in which government holds a majority equity position and in which a Kenyan fills the position of managing director, multinational firms do not appear to do any training that can be said to be exceptional, either in terms of the quantity of training supplied or in the utilization of various training facilities. Government involvement at the Board of Directors level and the selection of who is to serve as managing director appears to be a major factor encouraging the training of local managers, rather than multinational firms per se (Gershenberg 1987:938).

Our analyses of contract-farming schemes in Ghana and Senegal corroborate the Kenyan material, suggesting that employment and training opportunities for local personnel are greater where government has a role in the ownership and organization of the scheme.

Comparisons between contract-farming schemes and integrated agricultural development programs are more appropriate than contrasting public and private sectors within the context of contract farming. Certain features of contracting schemes (whether private or publicly managed) distinguish them from more general government-supported development programs, especially those involving parastatals. The former invariably have proven more reliable than state parastatals in delivering inputs and credit to farmers, providing market services for farmers, and making timely payments to farmers. Indeed, a prime reason why

farmers are attracted to contract-farming schemes is that they are more reliable sources of inputs, credit, and market services than other agricultural development programs.

5. Support for Small- and Medium-Scale Contract-Farming Schemes

The study was asked to document the range and diversity of contract-farming schemes and, therefore, dealt with several very large enterprises that probably would not be suitable in an AID strategy for contract farming. For example, the cost of the SODEPALM scheme in the Ivory Coast exceeds US \$60 million, and that of the Jahaly Pacharr Rice Scheme, Gambia, is close to US \$20 million, while, as we noted above, the development multiplier effects of many of these larger schemes do not justify their high costs. The costs of developing one hectare of irrigated rice on the Jahally Pacharr Scheme is close to US \$15,000, a cost heavily subsidized by donors and the government. These larger schemes almost always have highly centralized management systems and make only minimal use of local resources and services. In an era of increased pressure on AID funding levels, such schemes, with high capital start-up costs, would seem particularly inappropriate.

Our study shows that better options for AID are small- and medium-scale contract-farming schemes, which increasingly involve production of horticultural crops, and which reveal greater multiplier effects per dollar invested than do larger schemes.³ Development costs per hectare on some of the smaller vegetable schemes in Senegal are less than \$1,000 per hectare (Rassas 1988), yet they generate significant employment and income. In addition, the implementation and management of smaller schemes are frequently undertaken by local firms (often with some government support), which more and more are the target of other AID programs. Smaller schemes tend to use local services--traders, market storage, and transport--and thus to have stronger linkages to the local and regional economies.

A note of caution is warranted in the use of very small local firms in contract-farming schemes. Indigenous, small-scale firms, the focus of many expanding programs of private-sector support, frequently lack the necessary technical, capital, and managerial resources to implement contract-farming schemes. The usual problems--lack of access to credit, market information, and markets--are compounded, in the case of contract farming, by their need for expertise in agricultural production. In supporting smaller schemes, AID would have to provide a technical assistance component, which in some cases could be quite substantial.

6. Policy Implications of Contract Farming

Contract farming has remained largely outside the ongoing economic and agricultural policy debates about Africa. The complexity of contract-farming schemes, both in their institutional structure and in their performance, have contributed to their absence from the broad debate over the appropriate role of "markets" and "states" in African agricultural and industrial development. Nevertheless, contract-farming schemes do operate within wider macroeconomic and sectoral-policy environments that often are ignored in the literature on contract farming.

In terms of marketing policies, the results of the study show that (1) "free competitive markets" are not always present in contracting schemes; and (2) changes in price policy may not be the most important mechanism for increasing production. Both the contractor and the contractee are seeking to control formerly uncertain components of the market. One or both sides may enter into a contract in order to reduce the threat of market competition. Thus, in contrast to the frequent call for free markets and increased competition, those implementing contract-farming schemes (whether public or private firms) are striving to internalize markets and escape from competition. The presence of competition in product markets may provide an initial impetus to the development of contractual arrangements. However, if such competition continues, a contract-farming scheme may be unviable due to the contractor's inability to enforce contractual compliance.

Contract-farming schemes often incorporate complex systems of incentives and controls for the participants, whether they be farmers, company owners, company staff, or hired managers. For participating farmers, the level of producer prices is one element of the entire incentive structure. However, our findings suggest that the level (or changes) in producer prices is frequently not the predominant component of this incentive package. Farmers are generally more concerned with income than with prices per se. Even where prices may be considered "too low" (i.e. below world prices minus marketing costs), due to the provision of technical assistance, inputs, and effective marketing services, farmer yields and incomes are frequently higher than would be the case if they relied upon "markets" to provide these services. Thus, farmers may be willing to trade off apparently "low" producer prices for such things as improved access to production inputs, improved access to output markets, stability of prices, receipt of technical assistance, and timely payment for crops. The emphasis that many researchers and donor agencies have put on price analysis and adjustment may thus be overdrawn. To contrast contract-farming schemes with "market" arrangements, one should examine effective payments and farmer incomes, rather than nominal price levels. The apparently wide set of incentives and controls utilized in contract-farming

schemes suggests that policy analyses focusing on price levels and changes may not be capturing important incentives actually valued by producers and traders.

One striking feature of the growing literature on contract farming is its virtual divorce from the ongoing economic and agricultural policy debates for Africa. Many studies have examined contract-farming schemes as internal subeconomies, isolated to a considerable degree from the wider macroeconomic and sectoral policy environment. However, given the nature of contract-farming schemes, one would expect to find their policy environment to be quite complex and quite important in the success and sustainability of the project. Contract-farming schemes generally transcend several sets of activities, each associated with areas of government policy-making. In Table 8.1 we list the various sets of activities that may be incorporated into a contract-farming scheme and the potentially relevant policy fields (see Table 8.1).

One can identify a large number of policies, implemented in pursuit of broad national economic and social objectives, which may well have a negative or at least an uncertain impact on the incidence and success of contract-farming schemes. A few types of policies will most likely have a negative impact on the incidence and/or success of contract farming. These policies will make contract-farming schemes more difficult to establish or reduce the scope for financial success. These include the following:

- Policies to concentrate agricultural research on basic food crops
- Policies that place ceilings on retail food prices
- Policies to regulate foreign investment
- Policies that tax agricultural exports

Several types of policies are likely to have a regulatory influence on contract-farming schemes. While perhaps in the interests of participating farmers, such policies may not be perceived by the contracting firms as in their interests. These policies will tend to increase farmer bargaining power. Such policies include:

- Policies to improve the dissemination of market information
- Policies to supervise weights and measures
- Policies to promote competition
- Policies to promote risk reduction and local insurance

For several types of policies it is highly uncertain what impact there would be on the incidence and success of contract farming. These policies would seemingly reduce the demand for contracts among farmers. However, some of these policies could

Table 8.1
Policy Aspects of Contract Farming

Activities	Policy Areas
Provision of production inputs and support	Agricultural credit Agricultural research and extension Price controls/subsidies on production inputs Licensing of inputs distributors Policies on the importation/local development of planting materials
Farm-level production	Land tenure Producer price policy Land-settlement policy Regional development policy
Post-harvest treatment	Quality regulations and grading Support of cooperatives
Industrial processing	Exchange-rate policy Trade/price policies for machinery and intermediary inputs Institutional Credit Industrial licensing Regional Industrial Policy
Marketing (domestic or export)	Consumer price controls/subsidies Exchange rate policy Role of public agencies Competition Policy Market information reporting Taxation/price regulation/quantity restrictions for exports

well reduce the tasks required of contracting organizations. Such policies include:

- Policies to improve smallholder access to official extension
- Policies to improve smallholder access to institutional agricultural credit
- Policies to raise producer prices
- Policies that support cooperative development
- Policies instructing public agencies to operate in remote areas

7. Integrating Contract Extension Systems with Other Agricultural Development Programs

Our analysis of contract-farming schemes has shown that contract extension systems (either private or public) have generally been more effective in disseminating new technologies to farmers than national extension systems. While contract farming for basic grains is not feasible, increased efforts to expand basic grain production by "piggybacking" on the extension and input delivery systems of new or existing contract-farming schemes can be undertaken. Since contract extension agents are better trained and better equipped than other extension agents, donor-funded agricultural-development programs, where appropriate, should try to utilize them in delivering advice and inputs. In certain contract farming areas of Zambia, this has taken place and contract agents have successfully delivered advice and inputs for food crops to farmers in their "contact" areas.

8. Special Consideration for Women

The emergence of labor-intensive crops as important contract commodities in Africa makes female farmers increasingly prominent in contracting schemes. As both Jaffee and Carney show (Final Report, Volume II), the management and labor contributions of female farmers are essential to the success of contract schemes. While there are instances of extension and other services being provided to female farmers (Jaffee, Volume II), historically they have been discriminated against in contracting schemes. In most cases, the production/marketing contracts are only in the name of the male household head. The dismal record of the Gambian Jahaly Pacharr rice scheme is a case in point. In order to avoid the mistakes of past contracting schemes (especially in Latin America), where female labor has been overexploited and assumed to have a very low opportunity cost, the economic interests of women should be built into any new initiatives and made an integral part of an AID strategy for contract farming. This is called for on both social equity and economic grounds (e.g.,

refusal of female farmers to participate can escalate financial costs and even jeopardize the scheme itself). Recommendations to improve the status of women on contract-farming schemes include:

- hiring female staff and extension workers on schemes;
- special provisions to guarantee women farmers access to credit and other services;
- titling of land for women and, in cases of tenancy arrangements, registration of tenant holdings for both women and men; and
- social services (including health and child care) for female staff members and farmers.

9. Credit Programs

As this study has indicated, the start-up costs of contract-farming ventures are considerable (in excess of \$100,000), even for smaller efforts. In terms of credit provision, AID could fund or otherwise support the establishment of credit programs that would provide both medium-term investment capital and short-term working capital. These should be implemented through new or existing credit institutions, which should be assisted in developing flexible lending policies that acknowledge the inherent risks of contracting schemes. They should make provisions for necessary plant-gestation periods, farmers' lack of physical collateral and land titles, and agroclimatic conditions that might delay loan repayments, despite the best efforts of the farmers or firms. Such policies might include appropriately generous grace periods on loan repayments, lending based on personal guarantors (rather than physical-collateral guarantees), deferral of interest in times of agroclimatic difficulty, and loan-guarantee schemes backed by donors. Built into any credit program should be provisions that insure the timely delivery of inputs and guarantee access to credit for women. There is considerable scope for improving input-delivery systems in Africa, which tend to be more reliable in contract-farming areas than elsewhere. The contract mechanism can be used not only to insure farmer compliance with production and marketing requirements, but also to make credit and other institutions accountable for the timely delivery of inputs.

10. Longer Project Cycles

Contract-farming schemes frequently introduce new crops and technologies that require a period of adjustment for farmers and scheme management. If settlement or resettlement of farmers is required, as in the Ghanaian oil-palm schemes, the period of

adjustment may be as long as five to seven years before reasonable economic returns can be attained. Many contract-farming schemes in Africa experience considerable economic losses in the first few years of operation. The Njoro Cannery scheme in Kenya, for example, confronted losses throughout its first three years of operation, achieving very minimal levels of production from its contract growers. Other schemes, including the Malawi Smallholder Tea Authority, faced similar problems. It is recommended, therefore, that investment decisions about contract-farming schemes be based on a project life cycle of at least ten years.

11. Other Program Considerations

Other contract-farming-related activities that could benefit from AID assistance include:

- conducting agribusiness/contract-farming assessments in specific countries, and making these available to prospective firms and institutions;
- helping existing and prospective contracting ventures to obtain market information, including market requirements and specifications, market contracts, and information on marketing procedures;
- disseminating information about available ("appropriate") processing technologies, as well as information about packaging materials, equipment, and requirements;
- assisting in the development and implementation of programs for middle- and top-level management of contract-farming firms and institutions;
- assisting LDC agricultural-research institutions to expand their capacity to conduct research on a broader range of commodities with local or export-market potential (particularly such higher-value products as vegetables); and
- providing technical and management advisory assistance to contracting schemes.

12. Summary

In sum, contract farming has emerged in response to complex market and production conditions, rather than as a mechanism for rural development. To facilitate the latter, donors, government institutions, and private firms must be willing to support policies, infrastructure, organizations, and services that can capitalize--in terms of development--on the large amounts of

revenue generated from these schemes. AID has not been, nor is it likely to be in the future, a major actor in the financing and management of large contract-farming schemes in Africa. This role is likely to continue to be dominated by the Commonwealth Development Corporation (CDC) and the IBRD and its affiliated organizations, which can provide the "venture capital" for these expensive enterprises. There is some scope, however, for AID to assist in the development of smaller, government and private contracting schemes and to provide indirect support to the larger schemes through financing of research, training, and infrastructure programs, which could indirectly assist them.

There are what we have called "piggybacking" actions that AID could adapt from contract schemes to assist their own agricultural-development programs. These include utilizing contract-extension systems to provide assistance on basic food crops, use of contract-input delivery systems to provide inputs for noncontracted commodities, and tying credit to the timely delivery of inputs and market services, for contract and noncontracted farmers. AID is currently funding several large agricultural-sector development and research programs in Africa, where low-cost modifications could be made to incorporate many of the recommendations included in this chapter.

Endnotes

1. The British-American Tobacco (BAT) Company has threatened to withdraw from contract farming in Kenya if the government allows the formation of cooperatives on its schemes. It prefers not to deal with farmers who are organized.
2. As recently as 1987, the Unilever scheme had not purchased produce from small farmers, nor had it provided the infrastructure and services that it had agreed to with the government. The government, in turn, had spent in excess of \$3 million to purchase the land for the Unilever scheme and provide infrastructure. Unilever apparently agreed to the outgrower component for its Benso Oil Palm Plantation (BOPP) scheme in order to appease the government and acquire land and concessions for its nucleus estates. It is doubtful that BOPP ever really planned to develop its outgrower component, since adequate oil-palm supplies for its factory can be secured from its nucleus estate.
3. It should be noted that the larger schemes are currently funded mainly by the World Bank and CDC, and this pattern is unlikely to change. The smaller, less formal schemes often lack capital and have been neglected by large donors. There is clearly a niche here for AID to fill.

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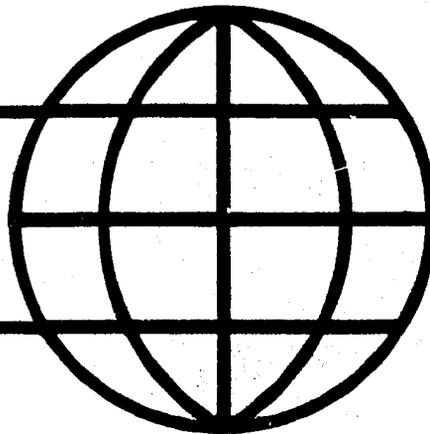
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**COOPERATIVE AGREEMENT ON HUMAN SETTLEMENTS
AND NATURAL RESOURCE SYSTEMS ANALYSIS**



Clark University
International Development Program
950 Main Street
Worcester, MA 01610

Institute for Development Anthropology
99 Collier Street
P.O. Box 2207
Binghamton, NY 13902

Contract Farming in Africa

Volume II

Case Studies

Edited by

Peter D. Little and

Michael Watts

1988

Prepared for

The Africa Bureau
U.S. Agency for International Development
Washington, D.C. 20523

This paper is published by the Institute for Development Anthropology and reports on work supported by the Human Settlement and Natural Resource Systems Analysis (SARSA) Cooperative Agreement No. DAN 1135-A-00-4068-00, at Clark University and the Institute for Development Anthropology, funded by the U.S. Agency for International Development, Division of Rural and Regional Development, Office of Rural and Institutional Development, Bureau for Science and Technology. The views and interpretations in this publication are those of the authors and should not be attributed to the Agency for International Development or to any individual acting on its behalf.

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Volume II
Case Studies**

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Preface

This volume (II) presents the most important of the case studies that were conducted under the Contract Farming in Africa project. An entire volume is devoted to the case studies because of their importance to the comparative analysis in Volume I, and because very few detailed analyses of contract-farming schemes are available in the literature. The case studies were carefully selected to represent the primary commodities and diversity of institutional forms of contract farming. They cover private horticultural schemes in Kenya and Senegal; joint government/private oil-palm projects in Ghana and Ivory Coast; private poultry schemes in Senegal; and a state-managed rice scheme in The Gambia. While each of the field studies emphasizes a certain dimension of contract farming, they all indicate the conditions under which contract farming emerges; assess the distribution of costs and benefits to the principal actors, including growers; and evaluate the role of contract farming with respect to donor and host government policies, technology transfer, and institutional development.

Michael Watts and Peter Little

CHAPTER I

CASE STUDIES OF CONTRACT FARMING
IN THE HORTICULTURAL SECTOR OF KENYA

by

Steven Jaffee

INTRODUCTION

The Study of Contract Farming: A Note of Caution

Contract farming is an institutional form whereby agricultural production is carried out according to an agreement between farmers and a buyer which specifies certain production and marketing arrangements. For many years contract farming has played a prominent role in certain agricultural sub-sectors in North America and Western Europe. Production contracts are the dominant form of farmer-buyer coordination in these regions for such commodities as poultry, seed crops, processing vegetables, sugarbeets, and fluid-grade milk. In recent decades, contract farming has become a more prominent feature of African agriculture. Crop-specific contractual schemes have been developed by both private firms and specialized government agencies, sometimes with concessional funding provided by international development agencies.

Contract farming in developing countries has been viewed from two distinct perspectives. One perspective sees contract farming as an institutional innovation developed to increase agricultural productivity and specialization and to improve coordination between production and marketing. It views the development of specialized contractual schemes as a compensating response to imperfections in factor and product markets and as an attempt to fill an organizational vacuum left by a poorly functioning public agricultural administration. These contractual arrangements are seen as offering a series of potential advantages to both farmers and buyers, relative to either dealing strictly in spot markets or developing integrated production/marketing operations. Contract farming is viewed as a potentially useful vehicle for improving small farmer productivity and increasing rural incomes.

Critics of contract farming tend to view it as an institutional innovation developed by powerful economic and political groups to increase agricultural productivity and specialization, to appropriate the gains from these improvements, and to pass on the relevant costs and risks to farmers or third parties. This perspective sees contractual arrangements being designed to create or strengthen market imperfections so that private interests gain at the expense of social misallocations of resources. This perspective posits a zero-sum process of the following nature. The contracting firm benefits by gaining greater control over a crop than possible under spot market conditions, yet without incurring most of the costs and risks of actual investment in production. These buyers are placed in a monopsonistic position, able not only to dictate prices, but also to manipulate quality standards to make adjustments for raw material and market imbalances. Farmers, on the other hand, are seen as getting locked into a dependent relationship with the buyer, made more vulnerable by their increased crop specialization and use of material inputs. Farmers may begin losing their autonomy as the contractor begins controlling many

agronomic decisions. Writers representing this position reject the possibility of small-scale farmers benefiting from contract farming.

Contract farming is a highly complex subject requiring analysis of a range of technical, economic, and sociopolitical factors. The institution exhibits wide variations in structure, participants, operating arrangements, and impacts. For this reason caution is necessary in making general comments about the past record of contract farming, let alone about its wider potential and limitations as a vehicle for development of agriculture and agro-based industries. Making generalizations from individual case studies may thus be hazardous. One's insights into a particular form of organization and contracting procedures and into a particular commodity sector of one country may be quite powerful, but the strength of one's arguments dissipates as one moves across organizational, commodity, country, and temporal space. This is frequently not acknowledged by either the outspoken proponents or critics of contract farming.

Contract Farming in Kenya

Within Africa, contract farming has been most extensively developed in Kenya. Production contracts have been extended to both small-scale and large-scale farmers. Contract farming plays an important role in the Kenyan tea, sugar, tobacco, oilseed, horticulture, poultry, and beer-making industries. Raw materials produced under contract are thus used in both export and import-substitution industries.

Within Kenya, interest in contract farming as an institution of development has appropriately focused on schemes incorporating primarily small-scale farmers. Since colonial times, the administration of agricultural support and marketing in Kenya has had a large-farmer bias. Large-scale farmers in Kenya have typically had greater access to inputs, credit, extension and research advice, market information, and alternative distribution channels than has been the case for smallholders. Given constraints in land availability, prevailing demographic patterns, and the political risks associated with highly unequal distributions of wealth and income, agricultural development in Kenya must be oriented toward greater intensification of production and improvements in the productivity and incomes of small-scale farmers. In certain circumstances, these goals may be approached through the mechanism of contract farming.

Within Kenya, there are a number of crops for which smallholder contracting has been fairly significant. These crops include: tea, sugar, tobacco, sesame seed, sunflower seed, French beans and other vegetables, and horticultural seed. The extent of smallholder participation in contractual schemes is estimated in the chart below:

Smallholder Contract Farming in Kenya

Crop(s)	Firm(s)	Farmers
Tea	KTDA	150,500 (a)
Sugar	MSC; others (b)	35,000 (c)
Oilseeds	OCD (d); Ufuta (e)	34,000 (f)
Horticulture (g)	Njoro Cannery; others (h)	21,500 (i)
Tobacco	BAT	10,000
Total		251,000

(a) The number of licensed growers under KTDA in 1986 was 150,414. However, there is evidence that additional farmers are growing tea without a license.

(b) Includes Associated Sugar Company, Muhoroni, and others.

(c) This is an estimate. During 1985-86 MSC and ASC contracted a combined total of 29,000 smallholders. We do not have data for the other firms.

(d) Oil Crops Development Ltd.. East African Industries holds 45%, CDC holds 35%, and the IFC holds 20%. The project was initiated in 1984 for sunflower and rape seed production under contract.

(e) Ufuta Ltd. is a subsidiary of Kenya National Mills Ltd and a sister company of Elianto Kenya Ltd. The latter had an unsuccessful sunflower contracting project in the late 1970s. This project is oriented toward sesame seed production at the coast.

(f) The OCD project intends to incorporate 20,000 smallholders by 1988 while Ufuta's target is 14,000. We have no data on the number of farmers actually under contract in 1986.

(g) Includes fruits, vegetables, and flowers, although most contracting is for vegetables for processing or export.

(h) Includes seed companies such as Kenya Seed Company, Regina Seed Company, and Hortitech and exporters such as Kenya Horticultural Exporters and Makindu Growers and Packers.

(i) A conservative estimate based on 15,500 farmers for Njoro Cannery, 3500 farmers for the various seed companies, and 2500 farmers with contractual links to other firms.

If the oilseed projects do reach their proposed scale in the late 1980s and if the other schemes simply maintain their participation rates, then up to a quarter million smallholder farmers will be producing under contract in the late 1980s. This represent approximately 16.7% of the 1.5 million smallholder families in Kenya. The proportion of contracted households is probably somewhat less than this figure as some farmers may grow more than one crop under contract. For example, several contracted horticultural farmers also grow tobacco or tea.

Numerous large-scale farmers also operate under production contract in Kenya. BAT Kenya Developments Ltd. has contractual arrangements with a limited number of poultry growers. Several hundred medium- to large-scale fruit and vegetable growers produce under contracts with processors and fresh produce exporters. Kenya Breweries Ltd. has a total of 17,500 ha of malting barley being grown for it under contract with large farmers. Oil Crops Development Ltd. intends to have 5000 largeholders producing sunflower and rape seed on 60,000 acres by 1988.

Looking across the different agricultural sub-sectors, one finds that the majority of existing contract farming schemes are linked to a processing operation. Many schemes also feature the participation of a European company, either as owner/managers of a scheme or through management and/or marketing contracts with locally owned firms. Many schemes are joint venture investments involving private management and Kenyan Government equity participation.

Literature Review

There is a sizeable literature on contract farming in Kenya. (See page 11.) This literature provides insight into a range of issues, including: the problem of incentives and controls for staff and farmers, the participation of the contractor in the production process, the transfer of technology, the generation and uses of income, the impact on labor and land markets, and the potentially central role of the State. However, this literature deals almost exclusively with three schemes: i.e., KTDA's smallholder tea project, Mumias Sugar Company, and the BAT tobacco project. The large schemes of KTDA and Mumias have received by far the most attention.

On the other hand, there has been no in-depth research and little reference to smaller or less formal schemes, to schemes that failed or were associated with unsuccessful companies, or to schemes that did not have considerable government backing. There has also been no research on the considerable number of contract farming schemes developed for horticultural or oilseed crops.

Thus, while the volume and quality of research on contract farming in Kenya is arguably the best in Africa (or even amongst developing countries generally), this literature provides extremely few generalizable propositions and little or no insight into several potentially important dimensions of contract farming.

The literature on the KTDA, Mumias, and BAT schemes does feature a consensus on a few issues. First, there is evidence from all three schemes that contract farming leads to an increase in cash incomes. Contract smallholders are economically better off than non-contracted smallholders in their area and the difference can at least be partially attributed to participation in the scheme.

Second, there is evidence that the income stream generated from contract farming is unevenly distributed. This has contributed to increased socioeconomic differentiation in the contracted areas. The differential stream of benefits relates substantially to the prescheme landholdings of participants and nonparticipants as well as to the availability of alternative sources of income and employment for households. As contractors have set minimum landholding and production scale requirements, the very poor have generally been excluded from such schemes other than through wage labor opportunities on contracted farms.

Third, the literature strongly suggests that the impact of contract farming will vary with organizational and production structure as well as with preexisting conditions and simultaneous socioeconomic changes. For example, while active farmer participation in the production processes for tea and tobacco has led to real "learning effects" which have "overspilled" into food production, this has not been the case for sugar where the farmer is more passive in the production process. While landholding sizes and the economies of scale in mechanical plowing and harvesting have resulted in land competition between sugar and food crops, such competition has not generally been important in the tea and tobacco areas due to previous landholding patterns and the smaller scale of contracted crop plantings. Crop and trade diversification has been common in tea areas, while the sugar zone resembles a monoculture economy.

Fourth, there is fairly wide consensus that smallholder farmers are not adequately represented or protected by intermediary organizations. In the case of tea, the grower committees and the factory boards tend to be controlled by larger and more prosperous farmers. In the case of sugar, the Mumias Outgrower Company has not been an effective intermediary. Local MPs typically emerge as the "voice" of farmers.

Fifth, it is a common finding that in male-dominated societies a contractual scheme may adversely affect the position

of women. In both the sugar and tobacco schemes it has been observed that men typically gain control over income while the women are relegated to perform difficult and unpaid routine work, such as weeding.

While the literature on contract farming does provide insight into several important issues, the literature features a sample that is biased in the direction of large, state-supported, formal, and successful schemes. As a result several dimensions of contract farming are given little or no attention.

For example, the existing literature frequently leaves the impression that contract farming arrangements are monolithic structures, stable over time. In fact, contractual arrangements may evolve gradually as managers, staff, and farmers adjust their behavior and formal structures to counter inefficiencies and pursue new opportunities. The exclusive focus on highly formal contract schemes has led to limited analysis of the possible transitions that occur in production/marketing arrangements between contractual and quasi-contractual links. The need for formal contracting may be related partly to the absence or presence of trust between farmers and buyers. Many contract farming schemes are not "greenfield investments" involving new crops, new farmers, and new buyers. Contract farming may involve farmers with prior experience with the crop, entering into a more intensive, multifaceted relationship with an existing or new buyer.

Also, the existing contract-farming literature in Kenya describes contract enforcement problems largely in relation to quality control and to credit recovery by the firm. In each case examined, the contracting firm has had a de facto monopoly over the purchase of the crop. Alternative market outlets for farmers either do not exist or are not remunerative.

Contract enforcement is a more general problem. It is problematic where one or both contracting parties benefits from acting opportunistically and where such behavior is difficult to detect. Such opportunistic behavior may relate to direction of sales/purchases, quality manipulation, and quantity cheating. In many cases of contract farming the "leakage" of raw material out of the project and into alternative distribution channels may be a major problem. The relative merits of sales through alternative outlets will vary, depending on seasonal market changes, the physical location of farmers vis-à-vis the alternative outlets, and the services provided by competing marketing agents. The development by the contractor of measures to guard against leakage may be a key dimension of a contract scheme. Both farmers and buyers may breach contractual terms related to the quality of the product.

Due to unforeseen circumstances (i.e., weather change), poor production practices (i.e., careless harvesting), and/or deceit (i.e., hiding subquality produce on the bottom of a carton), the quality of a farmer's crop may be below standard. This may or may not be detected by the firm. In some cases the firm will chose to ignore the quality problems. In other cases it will make price deductions or reject the crop entirely. Farmers may be able to connive with contractor staff to allow subquality produce to go unnoticed. On the other hand, the contractor may be able to use quality control procedures to adjust quantity imbalances. Particularly where quality is difficult to measure and grading and sorting are performed by company staff, farmers may be surprised by produce inspection results. Farmers and contractors (or their staffs) may attempt to cheat one another with regard to the quantity of the contracted crop. Farmers may obtain seed or other inputs outside of the contract and then sell the extra crop with the contracted crop. Company staff may be given incentives by farmers to overweigh their crop. Alternatively, staff acting on their own or under company orders, may underweigh farmer deliveries.

Further, the literature on contract farming in Kenya notes that changes in product market conditions affect the profitability of schemes and the level of benefits accruing to farmers, but there may be cases where such market changes may undermine the viability of the contracting scheme itself. Adverse market conditions may undermine the contractor's financial position, preventing it from raising producer prices in line with production costs or reducing the scope of its services. Highly favorable market conditions may lead to the emergence of competing contractors or marketing agents offering farmers terms that the original contractor is unable or unwilling to match. Some market changes may undermine the comparative advantage of the entire venture and lead to closure even when the contract-farming component was performing adequately.

Contract Farming in Kenyan Horticulture

These three dimensions of contract farming schemes--their evolving organizational structure, their vulnerability to opportunistic behavior by one or both parties, and their critical links to the downstream market--are all readily apparent in several of the contractual schemes which have been attempted in the horticultural sector of Kenya. Horticulture has been one of the most dynamic sectors in the Kenyan economy in recent years. It has been driven by a growing export trade, together with rapid rates of increase in domestic trade and consumption. Horticultural exports, comprising fresh and processed fruit and vegetables as well as flowers, are now the country's third largest source of foreign exchange after coffee and tea. The sector features a wide range of organizational structures and

mixtures of private and public investment. Large integrated production/marketing operations have played an important role in the development of the sector and these organizational forms remain dominant for flowers, pineapples, and strawberries.

However, for several horticultural crops and commodities there have been numerous attempts at organizing small- and medium-scale production under contract. For different horticultural crops there have been as many as twenty different contract farming schemes proposed or attempted over the past two decades. In the past decade alone, there have probably been at least ten different schemes developed to have farmers grow French beans under contract for processing or fresh export. Many of these schemes failed or had only short-term success. At present, there are at least four schemes which feature small and medium-scale farmers growing vegetable and flower seed under contract. Since 1980 there have been at least three attempts at having smallholders grow "Asian vegetables" under contract for exporters through the intermediation of cooperatives. Since the late 1970s there have been several attempts to organize smallholder flower production under contract.

In each of the attempts at contract farming in horticulture the relationship between buyer and farmers has gone well beyond a strictly marketing agreement. In some cases the involvement of buyers in the production process has been substantial. In most of the cases farmers had experience growing the crop prior to the development of the contracting scheme. However, inefficiencies in product and input markets made production contracts attractive to farmers. In many cases the buyer faced competition for the crop and contracting was seen as a method of lowering uncertainties about raw material supplies. Still, leakage of produce and poaching by competing firms have typically been problematic. In contrast to the very large contract farming schemes, several horticultural contractors have lacked substantial staffs or access to seconded governmental staff. They have thus had to rely more substantially on local staff or agents or on existing cooperative societies. Most of these schemes have involved no government funding and limited government involvement.

We have chosen three horticultural contracting schemes for in-depth case study analysis. One case concerns the vegetable dehydrating company, Pan African Vegetable Products Ltd. (PVP). This is the first case of smallholders growing under contract with an agricultural processing firm in Kenya. The project was initiated in 1964 and, with numerous changes in ownership and management, carried on until 1982. The smallholder contracting scheme of PVP was largely successful, yet the project experienced continuous financial losses as a result of processing and marketing problems and the insufficiency of large-farmer supplies of raw materials.

Our second case deals with "Asian vegetable" production and marketing and the contractual scheme attempted by Kenya Horticultural Exporters (KHE). KHE has been Kenya's leading exporter of fresh fruit and vegetables for nearly two decades and has on several occasions entered into production contracts with small and medium-scale farmers. The company's scheme for contracting smallholder "Asian vegetable" producers was successful for a few years, but the project was not sustainable due to the larger competitive environment for "Asian vegetable" production and marketing in Kenya. The scheme contributed to substantial increases in smallholder production which the contracting company was only temporarily able to benefit from.

Our third case is the most formal horticultural contracting scheme. It is that of Njoro Cannery, a processor of French beans which has production contracts with over 15,000 smallholder farmers in western Kenya. The Njoro Cannery project was initiated in 1982 in the wake of numerous unsuccessful prior attempts at contracting western Kenya farmers to grow French beans for processing. Seventy percent of the farmers participating in this scheme are women, growing French beans on only 1/20th of an acre. While experiencing numerous technical, organizational, and political problems, this project has managed to survive, produce a high-quality export product, and provide additional sources of income and employment in an economically deprived area.

A review of the literature on the tea, tobacco, and sugar schemes provides insight into the forms of contract farming and its potential impact. The more "high profile" schemes exhibit substantial variation in the nature of the production process and sales arrangements. For example, tobacco production is carried out under a "supervision-intensive" regime and based solely on outgrowers. BAT's comprehensive extension service is responsible for instructing farmers and monitoring their behavior throughout the growing and curing processes. All necessary inputs are provided on credit. However, the tobacco farmer is responsible for carrying out all tasks. Hired labor is uncommon. Farmers are paid cash on the day of delivery according to quantity and a diverse grading scale.

In contrast, sugar production is done both on estates and on outgrower farms. Even with the outgrowers, the company carries out many production tasks either mechanically or through the use of work gangs. The farmer's main task is weeding and even this may be carried out by hired labor. Farmers have no post-harvest role and payment is based strictly on volume.

Various researchers see three strata of farm households emerging in the contract farming areas. The top stratum is that of the "capitalist farmers" who have relatively high income, derived partly (or largely) from trade and salaries. They rely

heavily on hired labor on their farms. These farmers can use the additional income from the contracted crop to invest in shops, taxis or production inputs. The second stratum, the "middle peasants," derive income from contracted as well as other crops. They use both family and hired labor. The income generated by the cash crop is used for school fees, housing improvements, and consumer goods. The third stratum consists of very poor households with small holdings and relying solely on family labor. Casual wage labor may be their sole source of cash income. They may have to reduce their holdings to obtain required cash. These farmers can produce cash crops under contract only at the expense of food production, thus increasing their vulnerability. As minimum landholdings and/or production scales are set by the contractors, these poor farmers may be excluded from the projects even if they wished to participate.

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PART I

**THE FRENCH BEAN CONNECTION:
FRAGILE SUCCESS OF A SMALLHOLDER CONTRACT FARMING PROJECT
IN WESTERN KENYA**

Introduction

This report examines several features of a privately managed production and marketing operation that has linked up to 15,000 smallholder farmers of a relatively deprived and very densely populated area of Kenya into an international market for a specialized high-quality agricultural product. Njoro Cannery, Ltd., is a locally owned firm acting through a marketing, management, and technical assistance contract with the French company Saupiquet and producing a top-grade canned French-bean product. The study most closely examines the raw-material-procurement dimension of the project. This is a contract farming scheme with smallholder farmers. We explain the rationale for this contract farming scheme and trace its historical background and organizational features. We also examine various aspects of the project's performance and impact. The analysis of the Njoro Cannery project is set within the context of the West European market for French beans and the wider development of French-bean production and marketing in Kenya.

The case of Njoro Cannery is one of fragile success. The project followed upon several relatively unsuccessful attempts in Kenya to have farmers produce French beans under contract for processing. In the first year and a half of the project it appeared that low farmer productivity and weak capacity to enforce contracts would doom it. Several important technical and institutional adjustments saved it, enabled it to expand, and put the contract farming element on a sounder economic footing. At this juncture the project was shaken by internal and external efforts (both legal and illegal) to redistribute project earnings. Adjustments were made to reduce further risks of this nature and the project has continued to expand its sales, employment, income generation, and farmer participation. The future of the project is uncertain, not only due to the fragility of the company's organizational structure or its potential competition from other Kenyan firms, but also possibly due to technical developments in Europe that could virtually negate part of Kenya's comparative advantage in French-bean production.

The study is organized as follows: we begin by making some general comments about French beans, their European market, and the overall pattern of French-bean production and marketing in Kenya. Moving on to the Njoro Cannery case study, we first examine the French market for canned green beans and provide some background information on Saupiquet. Next we trace the origin of the project by discussing Saupiquet's prior experience with French-bean contracting in Morocco, its trade ties to Kenya prior to the Njoro Cannery project, and its feasibility study for the Kenya project. The next section outlines the physical and socioeconomic characteristics of the site for the contracting scheme. This is followed by a broader analysis setting out the

rationale for this type of organization for raw material production. The project's actual organizational and contractual structure are then discussed. Next comes an overview of project performance according to a range of indicators. This review of basic organizational features and performance reveals that there have been considerable variations over time. One then needs to explain these performance variations and see whether they were linked to structural changes within the scheme. This we do in the next section where we view the processes of project development. We close with some final comments about the future prospects for the project and some lessons that the project suggests.

French Beans

The French bean (Phaseolus vulgaris) is one of the names given to the pods of the plant species Phaseolus. Other names commonly given to these pods are green beans, snap beans, string beans, bobby beans, and haricot beans. There are many hundreds of different varieties of Phaseolus vulgaris. These varieties may have different characteristics with regard to their production and their quality. Important differences may relate to the following:

Production:	Quality:
Color and application rate of seed	Length of pod
Size and shape of plant	Width of pod
Color of leaves and flowers	Curvature of pod
Length of time to maturity	Texture of pod's skin
Tolerancy to bean rust and halo blight	String development in pod
Rate of seed development	Color of pod
Rate and pattern of yield	

The French bean is thus potentially a highly heterogeneous product. Varietal selection may be a complicated process. First, it involves a matching of quality characteristics with consumer preferences, or the requirements for processing or effective distribution. French beans are consumed in various forms, including fresh, canned, frozen, or dehydrated. Certain varieties have characteristics entirely unsuitable for some forms of consumption or processing. Even within categories for consumption, there are grading schedules outlining quality

specifications for individual pods as well as acceptable quality tolerances (i.e., variances in quality).

Varietal selection will also need to relate varietal production characteristics with the ecological conditions, agronomic practices, and even the socioeconomic features of the area where the crop will be grown. For example, in recent years varietal development in Western Europe has concentrated on cultivars that are amenable to mechanical harvesting. Many of the older French-bean varieties have a yielding pattern consisting of several dispersed flushes over a period of three to six weeks. For these varieties mechanical harvesting is not economical. The harvesting machine acts as a comb, pulling the plant completely from the ground. Using a mechanical harvester for the multiple-flush varieties would result in very low yields. Harvesting of these older varieties must be done by hand, and labor requirements per acre of beans are very high. European producers, faced with rising labor costs, required single-flush bean varieties that could be mechanically harvested.

Fortunately for countries with relatively low labor costs, the single flush mechanically harvested French beans are typically larger in length and width than the pods of the "old" varieties, and frequently have a rougher skin surface. While these characteristics may be suitable for some forms of processing or meet the preferences of certain consumers, they may not be suitable for other uses or market segments. Certain consumers or institutional users of French beans have retained a preference for small and smoothly textured varieties. For this market segment there exists premium demand for particular varieties and certain quality characteristics. Probably the most important specification by these consumers relates to the width of the bean pods. Certain groups offer premium prices for "extra-fine" beans, i.e., those with a width of 6.5 mm or less. Other groups may have preference for "fine" beans, i.e., those with a width less than 9 mm but more than 6.5 mm. Beans of this size cannot be mechanically harvested.

French-Bean Production and Marketing in Kenya

Over the past two decades the French bean has become an important crop in Kenya. While grown for both fresh sale and processing, the main impetus for production has been an expanding export market. Since the early 1960s, Kenya has exported "fine" and "extra-fine" French beans to Western Europe. While this trade was initially targeted toward high-class caterers and department stores, over the years the air-freighted Kenyan beans have become an item distributed by supermarket chains and purchased by middle class consumers. Kenyan exports are concentrated in the October-May period when European production of French beans is limited by adverse weather conditions. Market prices for French beans during this period are substantially

higher than during the European summer when local supplies are plentiful. Still, a certain level of demand for the Kenyan product is retained during the summer months by caterers and "up-market" greengrocers.

Kenyan French-bean exports have been aimed largely for sale to France, Belgium, and the United Kingdom. Consumers in the first two countries have a preference for "extra-fine" beans while U.K. consumers prefer "fine" beans. Consumers in the Netherlands and West Germany prefer the larger bobby beans, which can be widely and cheaply procured from Spain or Egypt. Kenya's main competition for the "off-season" markets for "fine" and "extra-fine" beans comes from several West African countries that have long-standing trade ties with France.

The growth in Kenya's exports of French beans can be seen in the following figures:

Table 1: Kenyan French-Bean Exports

Year	Tons
1968	109
1972	642
1976	2324
1980	4965
1982	6306
1983	6447
1984	7094
1985	6558

Source: HCDA trade figures

French beans have also been grown in Kenya for processing. For many years several firms have been canning them for sale in both export and local markets. Generally the high levels of protection in the domestic food-processing industry together with high production costs have made the canned products uncompetitive in world markets but highly profitable on the local market. Canning companies have generally purchased beans from wholesalers or directly from farmers in times of market surplus. In addition to canning, French beans have been processed in Kenya through dehydration. During the 1960s and 1970s a dehydration factory at Naivasha processed French beans for export to Western Europe. This firm entered into loose production contracts with farmers. Both the dehydration factory and each of the canning companies have experienced considerable problems in obtaining sufficient quantities of raw material. The prices and other terms that they have offered French-bean growers have frequently been uncompetitive with those offered by the fresh market. The Njoro Cannery project contrasts with these other processing operations.

Kenya's comparative advantage in French-bean production rests on two main factors: its ecology and its relatively low labor costs. Limited seasonal variations in temperature and day length allow French-bean production to be extended throughout most of the year in Kenya. French beans cannot survive frost and thus can be grown only under controlled-temperature conditions in most parts of Western Europe during the winter. They are grown in areas of Kenya with altitudes ranging from 1000 to 2000 meters, which are only rarely subjected to frost conditions. Various areas of Kenya have soils that are highly suitable for French-bean production. Furthermore, the presence of trees or bushes on many farms provides natural wind-breaks for the French-bean plants.

Production of "fine" and particularly "extra-fine" French beans is not economically viable in most parts of Western Europe, given the high labor costs that would be incurred in harvesting. Harvesting of an acre of French beans may require 15-20 people over a period of three to six weeks. Once pods are formed they grow at a rapid rate. To obtain "extra-fine" beans, picking must be done every day. The result is that harvesting costs will make up a high proportion of overall production costs for French beans. Where labor costs are relatively low, one may still obtain an economic return on a crop even when such labor time is allocated. In Kenya the daily wage for French-bean pickers ranges from Ksh 10 to 22, equivalent at the present rate of exchange to \$0.63-1.38 per day.

French beans are produced in Kenya by both small-scale farmers under rain-fed conditions and larger commercial farmers under irrigation. In recent years 4000-6000 smallholders have been engaged in French-bean production for the fresh export market alone. These farmers typically grow 1/2 to 1 acre of French beans as part of a mixed-farming pattern including maize, dry beans, dairy cows, and other crops. Such smallholders are found in Athi River and in various sites in Central Province. Larger scale producers for the fresh export market may number 100-150. These farmers may have up to 20 acres of beans under production with harvesting being done on 4-5 acres at a single time. These farmers typically grow French beans to supplement incomes from salaried employment or to improve the cash flow position of farms oriented primarily to tea or coffee production. Some larger farmers are specialist horticultural growers. Larger French-bean farmers are common at Lake Naivasha, Thika, and Athi River.

A wide range of institutional arrangements exists for farmers in the marketing of their output, from essentially market transactions, through quasi-contractual and contractual sales, and on to vertically integrated operations. A full examination of these different marketing arrangements is not possible here.

We merely summarize the main features of three alternative channels.

Several thousand smallholders in the Gatundu and Makuyu areas of Central Province are engaged in French-bean production. Some farmers have grown this crop since the early 1970s. More than a dozen exporters are fairly regular bean buyers in the area. Most of these firms recruit local people to act as intermediaries recruiting farmers and organizing collection and farmer payments. Some intermediaries work with more than one exporter. Exporters may send their trucks to the area three or four times per week during the main export season. Prices are set for the season with one price for "extra-fine" beans and another price for "fine" beans. These "fixed" prices may be subject to short-term adjustment as a result of changing market conditions. Exporters provide no seeds or other inputs and are not in a position to provide any technical advice. The intermediaries distribute cartons to farmers and arrange the days for the farmers to deliver filled cartons to a store or stall. For his efforts the intermediary will take a few shillings per carton commission. Payments to farmers are made fortnightly. Farmers may deal with several different intermediaries (and thus exporters), shifting their sales in light of short-term higher price offers being made by competing exporters.

Kenya's largest exporter of fresh fruit and vegetables is a firm called Kenya Horticultural Exporters (KHE). In recent years the company has exported up to 2500 tons of beans annually. The bulk of its supplies are obtained on contract from large and small growers. In 1986 KHE had 150 farmers growing beans under contract. KHE provides seeds and chemicals on credit to be deducted against the delivered crop. The company has two experienced horticulturists who can advise farmers on production problems, and it employs several people who assist farmers with proper grading and packing. Farmers are paid a fixed price for the full export season. Prices are changed only in exceptional circumstances. During the peak export season KHE trucks may collect produce five or six days a week. Farmers are paid whenever they want. Some receive payment weekly, others fortnightly or monthly.

While KHE may directly contract with only 150 bean farmers, operating under its bean procurement "umbrella" are probably 500 or more farmers. Several of KHE's farmers have their own subcontractors. One contract farmer in Mwea has developed a procurement network of over 200 small-scale farmers in the area. The subcontractors, most of whom are women and many of whom grow the beans on plots provided by the National Irrigation Board, typically have 1/4 to 1/2 acre under beans. The KHE contract farmer provides seed, fertilizers, and chemicals on credit to "loyal" subcontractors. He maintains the collection stations

where KHE trucks pick up supplies. The contract farmer takes a margin of 5-10 percent of KHE's contract price.

The export company Homegrown presents another method of raw-material procurement. Homegrown actually has two separate systems. With twenty large-scale farmers he maintains seasonal contracts. He pays premium prices over those offered by competitors, but his quality standards are far more rigid. He employs fifty graders who are actually brought to the contracted farms during harvesting. These graders go through the fields advising and monitoring the pickers. They check the quality and weights of cartons before they leave the farm. The contract farmers receive seeds and some chemicals on credit. Homegrown's manager, an engineer by training, has designed small-scale dams for ten of his farmers. Producer payments are made weekly.

Homegrown simultaneously operates a different system for raw material procurement from smallholders. He maintains two collection centers in Mwea. Small-scale farmers bring their crop in bags, grade them, and sell them in bulk form to the company. Depending upon the regularity of a farmer's sales to the company, she may be paid cash on the spot or else paid weekly. No inputs or technical advice are provided. Transporters take these beans to a company packing/cold-storage unit where the beans are rechecked for quality and packed into cartons.

The production and marketing of French beans has had a number of beneficial impacts. One immediate benefit is the generation of foreign-exchange earnings. In the early 1980s the foreign-exchange earnings for fresh French-bean exports have been the following:

Table 2: French-Bean Export Earnings

1981	Ksh 59.8 million
1982	63.1
1983	70.9
1984	78.0
1985	72.1

Source: HCDA Export Data

These figures are actually "minimum" export values, calculated by taking the Government's minimum export prices and multiplying them by the volume of sales. Actual foreign-exchange earnings are probably 10-15 percent above these minimum values.

A second major benefit has been the generation of cash income opportunities for small-scale farmers. French beans are an ideal smallholder crop given their labor intensivity, their short production cycle (i.e., three months from planting until completed harvest), and the small planted acreages needed to

obtain a good supplemental cash income. Based on exporter reports about their bean procurement systems, we estimate that 60 percent of the beans that are exported are produced by small-scale farmers. If one assumes for 1987 that Kenya will export 7000 tons of French beans and one takes a rough average producer price of 10.4 shillings/kg and deducts 1 sh./kg for the middlemen, then smallholder gross income for beans this year will be Ksh 37.11 million.

French beans have also been a lucrative source of income for many large-scale farmers and have helped coffee farmers to overcome cash flow problems associated with delayed payments for that crop. Even when using conservative estimates for yields and producer prices, large growers can obtain a gross income of Ksh 19,600 per acre against production costs (not including depreciation on equipment) of about Ksh 10,653. This net income of Ksh 9000 is for only a three month crop. At least three separate crops per year can be grown.

A third major benefit of French-bean production has been its generation of employment opportunities. Bean production on small farms is undertaken by family members, although a few local people may be hired to assist in picking. Bean production on larger farms is carried out almost entirely by hired labor. The picking and grading of beans is performed almost exclusively by women. Some women may reside permanently on the farms, while others come from nearby villages and work on a seasonal basis. A long-distance migrant flow has also been observed with women from Western Province coming to pick beans in areas such as Athi River and Naivasha.

French-bean production is considerably more labor intensive than most crops grown in Kenya. Compare the figures below:

Table 3: Work Days Needed Per Crop Per Ha

French beans	554 days
Coffee	294
Cotton	235
Hybrid Maize	152

Source: Hormann and Thuo (1979)

Having examined some general characteristics of French beans and the production and marketing of French beans in Kenya, we move now to discuss the case of Njoro Cannery.

Njoro Cannery

The Market

Njoro Cannery produces and exports canned French beans of the "extra-fine" quality. Its market orientation is exclusively the French market. The market for canned green beans in France is segmented into three quality levels--"extra fine," "trifine" (or simply "fine"), and bobby bean. Annual French consumption of canned extra-fine beans is 30-35 million cans of A 2 1/2 size (approximately 1 kilo). (1) This level of demand has been stable over several years, and the French market for canned vegetables generally is essentially saturated. Demand for the canned product is seasonal with reductions during the summer months when fresh green beans are available in abundance.

French production of canned French beans has declined since the mid-1970s as seen below:

Table 4: Production of Canned French Beans in France (tons '000)

1975	35.2	1978	41.0	1981	31.7	1984	16.2
1976	34.1	1979	35.1	1982	36.0	1985	21.2
1977	33.9	1980	28.1	1983	22.1		

Sources: Marketing In Europe (April 1981), (April 1986), (October 1986)

High labor costs have rendered French production of this labor-intensive quality product uneconomical. Consumer demand is being met by increasing levels of imports. Examine the following figures for French imports of green beans (including French beans and mange-tout):

Table 5: French Imports of Green Beans (tons; Francs '000)

Year	Volume	Value
1980	9.6	39.7
1983	20.1	101.4
1984	19.9	137.5
1985	25.2	193.1

Source: Marketing in Europe, Oct. 1986, p.52

French imports of canned green beans carry no tariffs for EEC and ACP countries, but carry a 20 percent custom for other countries of origin. The product must be labeled in the French language and conform to specifications related to weight, size, and quality.

Since the mid-1970s, Morocco has been the leading supplier of canned green beans to France. In 1985 it provided 56 percent of France's imports, sending 13,998 tons. The second largest share was taken by Belgium/Luxembourg, sending 4061 tons and accounting for 16 percent of imports. Kenya was the third most important supplier, sending 3714 tons for a 15 percent share. It should be noted that supplies of extra-fine beans are coming almost exclusively from African countries--i.e., Morocco, Kenya, and the Cameroon.

The French vegetable-canning industry comprises 143 enterprises, but sales are concentrated in a few firms. Five manufacturers account for 63 percent of the industry's turnover and three national brands account for over a third of canned vegetable sales through the grocery trade. These three brands are Cassegrain (for Saupiquet), D'Aucy (for Compagnie Générale de Conserve [CGC]), and Bonduelle (for Bonduelle).(2) These are also the three largest firms and brands for the trade in canned French beans. Saupiquet and CGC each supply approximately 8 million cans/year while Bonduelle supplies 3-4 million cans/year. Many smaller firms supply the balance.(3)

While the manufacturers formerly distributed their products to individual supermarket chains, in recent years a half dozen central food-distribution firms have emerged that deliver a large range of foodstuffs to supermarket chains. The major manufacturers now sell through these organizations. While Saupiquet sells its products almost exclusively under its Cassegrain brand, the other leading firms sell under both their own brands and the labels of the retail chain. Heavy competition has sharply reduced margins, and price premiums for prominent brands have been reduced. At the retail level canned fine mange-tout beans sell for approximately one-half the price of extra-fine beans.(4)

Saupiquet

The company involved in the Kenya project is Saupiquet. It is a public company with shares traded in the Paris stock exchange. There are a few major shareholders, including Compagnie Navigation Mixte who hold 20-25 percent. The firm dates from the late 19th century and has always been a canning company. The present company is a result of a long series of mergers which, beginning in 1955, have incorporated twenty family businesses. The group consists of a parent company, five French subsidiaries, two European subsidiaries, and two African subsidiaries. Unlike its two leading competitors, it has not operated its own farms in France. Also unlike its leading competitors, it supplies canned vegetables only to the household market, not to the institutional sector.(5)

Sixty percent of the firm's turnover derives from fish (mainly tuna) obtained from the Guinea Gulf and the Seychelles with nearly a quarter of fish requirements coming from the firm's own boats. Ten percent of the firm's turnover comes from ready-made meals. For this it imports meat from Argentina, Australia, and New Zealand. The remaining 30 percent of turnover is derived from sales of canned vegetables. It produces in France canned bobby and French beans, carrots, sweet corn, celery, peas, and mixed vegetables, while importing canned red pepper from Eastern Europe, sweet corn from the U.S., Canada, and Israel, and French beans from Morocco and Kenya. In France it ranks #1 in fish and #2 in vegetables and ready-made meals in terms of sales. It is one of Europe's five largest canners. Saupiquet had a 1985 turnover of French francs 1.63 billion and employed 3437 people. (6)

Saupiquet's attraction to Kenya rests on the two aspects of comparative advantage discussed earlier: ecology and low labor costs. Since the early 1970s Kenya had been supplying fresh "extra-fine" beans to the Paris Rungis market and had begun to develop a reputation for quality. The Kenyan product was available all year long, in contrast to local French production which was limited to the summer months. Local production patterns forced canners to process green beans during a short period and to maintain costly stocks for the remainder of the year.

The most important factor, however, was rising agricultural labor costs in France rendering it uneconomical to harvest and process "fine" and "extra-fine" French beans. Still, the French consumer was willing to pay a premium price for supplies of the high quality product. Saupiquet needed to source this product from areas with relatively low labor costs. Most important is the identification of areas with low cost but productive agricultural labor forces. The cost of harvesting the raw material is the most important cost in the processing of French beans. Even in Kenya where taxes, tariffs, and imperfect competition render the costs of fuel, cans, and equipment considerably higher than in France, the beans themselves have comprised the largest component of total production costs covering an average of 37.7 percent of total costs over the 1983-85 period. (7)

The Origins of the Kenyan Project

In the mid-1970s, witnessing increased competition in the French market and continuously rising agricultural labor costs in Europe, Saupiquet began to examine the possibility of sourcing canned French beans from Africa. Initial efforts were made in Morocco and Kenya. Both of these efforts would contribute to the later development of the Njoro Canning project in the 1980s.

Saupiquet in Morocco(8)

Prior to Moroccan independence, Saupiquet had operated fish canning factories in that country. When these were nationalized with minimal compensation, the firm adopted a policy of not making further capital investments there. However, Morocco had become an important supplier of fresh "off-season" French beans to the French market and one of Saupiquet's leading competitors was obtaining canned beans from that country. Contacts between the Vice President of France and a top official in the Moroccan Ministry of Agriculture led to a fact-finding mission to explore the scope for processing beans for Saupiquet.

An agreement was reached with a Moroccan businessman who owned a small processing factory (producing paprika for export to the United States) whereby the local businessman would provide the finance and Saupiquet would provide technical assistance and management, ensure the marketing of the canned product, and guarantee a minimum profit level. Saupiquet sent Mr. Gilbert Bintein, a manager of one of its European factory operations, to manage the project. The local businessman invested one million French francs to build a new factory site (1.2 tons/hour capacity) and provided 300,000 French francs toward the initial raw material production operations. Production began in 1976.

The project manager knew that they could not base raw material procurement on a large-scale estate. Due to the crop's labor-intensivity and the problem of supervising a large labor force, he figured it unlikely that they could obtain an "extra-fine" or "fine" product from large-scale production. However, if they could not obtain such a quality level there was no point operating in Morocco. Low cost bobby bean supplies could be obtained in Europe. An experienced production specialist from Saupiquet recommended that the factory obtain raw material by procedures similar to those used in France: i.e., the company should provide production contracts to farmers to grow plots of 2-5 ha of beans. Another adviser, a man who had just completed work on a rice project in Madagascar, suggested that better results could be obtained by focusing on smaller units of production. The latter strategy was eventually adopted.

The production area chosen was a Spanish- and Arabic-speaking area near Tangiers with sandy soils but with good ground-water resources. Local farmers were growing cereals and vegetables for home consumption. Most did not know what a French bean was, as the area was about 250 km from any major bean growing area. The company began with demonstration plots and initially convinced 50 farmers to grow the crop. By 1980 nearly 4000 farmers were participating in the project.

Participating farmers had a minimum holding of 6 ha with some farmers having 15-40 ha French beans were generally grown on

1/4 to 1/2 ha plots although some farmers had up to 2 ha of beans growing at any one time. Farmers grew French beans under contract throughout the year. Initially the crop was collected and brought to the factory for weighing and sorting. Farmers were suspicious about this quality control and weight reporting system, so a system was developed to purchase the beans at a village-level collection center using a company representative with a scale. The company wanted to reduce the risk of loss due to theft or improprieties surrounding cash payments, so it instituted a system of providing farmers ticket receipts for their deliveries for a lump-sum payment at the end of the crop. Initially this practice was resisted, but as an "ambiance of trust" was built up, the farmers gave their support. Groups of farmers elected leaders to act as intermediaries between them and the company.

Saupiquet's (i.e., Bintein's) experience in Morocco over the 1976-1980 period had an important influence over the design and functioning of the Njoro Cannery project, especially in its early development. The knowledge gained and the lessons learned would have both positive and negative influences on the Kenya project. This issue will be explored below.

Saupiquet Imports from Kenya

Since the early 1970s French companies had been importing Kenyan fresh French beans to supply the local catering and "up-market" consumer trade. Saupiquet was interested in finding someone to expand Kenyan production and to process extra-fine beans. At the time Kabazi Cannery was the only firm actually processing green beans to supply the small and highly protected Kenyan market. Kabazi was jointly owned by a local businessman and Brooke Bond (K). Kabazi began supplying small quantities to Saupiquet in 1976. Kabazi was not interested in getting involved in supporting French-bean production, but agreed to increase processing output if provided additional raw material. One French importer who was in contact with Saupiquet suggested that the latter contact his fresh French-beans supplier, a firm called Corner Shop Ltd., to see whether that firm would be interested in organizing raw material supplies for Kabazi. Corner Shop's manager, Mr. Wadhwa, was amenable to this arrangement.(9)

Between 1977 and 1981, Mr. Wadhwa, using technical or financial support from the Ministry of Agriculture and from several foreign donor agencies, initiated a number of French-bean production schemes in Western Kenya. Together with an American partner he leased a 1000 acre farm in Nanyuki to grow potatoes and French beans each on 100 acres. The potato seeds that he was given by a government agency proved to be defective and that crop was lost. With the beans they were unable to organize sufficient labor to do the weeding and harvesting of such a large planted area. That effort was also written off.(10)

In areas such as Kitale, Eldoret, and Bungoma, Wadhwa attempted to encourage large scale farmers to grow a few acres of French beans. Rather than deal directly with the farmers, Wadhwa provided inputs and crop payments through local cooperative societies that had been handling other crops. By 1979 Corner Shop had 1500-2000 farmers growing beans under this system. The firm was not sufficiently able to supervise input distribution, production, and collection, given the scattered pattern of the farms, and was dependent on the effective functioning of the local cooperatives. Cooperative mismanagement and entrepreneurial pursuits on the part of managers undermined the system. Many participating farmers became disillusioned with growing French beans for processing, given the heavy labor demands and the low price offered them relative to what was being offered by exporters of the fresh product. The seeds provided by Wadhwa were of the Monel variety, the same variety preferred on the fresh market.

Wadhwa continued to search for new areas. A staff member of the Bungoma Horticultural Cooperative recommended that Wadhwa try his home area, Vihiga Division of Kakamega District, because of its suitable ecological conditions and the absence of satisfactory cash crop options in the area. In 1979 Wadhwa started operating in Vihiga. Corner Shop operated through the Manyatibu Cooperative Union, which had previously dealt with locally produced dry beans, honey, tomatoes, and poultry. Corner Shop would provide inputs to the Union on credit to be deducted against the future crop. The Union in turn was to deal with three primary societies. These societies would issue seed, collect the crop at collection stations, and serve as bases for local staff appointed by Corner Shop who would do chemical spraying of fields and supervise grading at the collection stations. Corner Shop appointed two field supervisors to go on motor bikes to advise farmers.(11)

While the effort was based on good intentions and there was initial enthusiasm about the project, the operation was neither technically nor organizationally sound and eventually brought financial loss and farmer disappointment.(12) Neither Corner Shop nor the cooperative leaders knew what inputs and cultural practices would be necessary to grow French beans successfully under Vihiga conditions. Field research was not undertaken locally. Rather, technical advice was based on field research conducted at government research stations in Thika and Nakuru, each under significantly different ecological conditions. "Advice" provided by chemical company salesmen proved to be misguided. Farmers were encouraged to grow continuously, even though rainfall was insufficient over 4-6 months to get a profitable crop.

The performance, both of the cooperatives and of the farmers, proved to be disappointing. Cooperative staff frequently sold chemicals and fertilizers, and some farmer receipts went "missing." The cooperative union delayed its payments to project workers and farmers, sometimes over three months after the time when Corner Shop paid the union. The deductions taken by the cooperatives were excessive given the level of services provided. In 1980 Corner Shop paid sh.2.50/kg but farmers were paid only sh.1.75, the cooperatives having taken 30 percent.

Farmer yields were very low, averaging 30-40 kgs per kilo of seed provided. This would be the equivalent of 600-800 kilos/acre, which is one-third to one-half the norm in Kenya for French beans. Thirty percent of the value of the input loans was not recovered by Corner Shop. Lacking adequate advice and supervision, farmers preferred to keep pods on the plants for additional time to get a heavier crop. The weight difference between an "extra-fine" and "fine" bean is approximately 40 percent. Farmers could thus considerably increase the weight of their crop by picking every other day rather than every day. The company had thus to take and process fine as well as extra-fine beans, selling the canned fine bean product on the local market. Operating at a loss, Corner Shop's operations in Vihiga drew to a virtual halt in 1981.

Project Establishment

In the fall of 1981 Gilbert Bintein came to Kenya to examine the potential for expanding processed French-bean exports to France. Bintein's attention was focused on identifying a suitable location for establishing a contract farming scheme. He looked for an area with 1) high population (and farm) density, 2) temperatures in the range of 20-25 degrees celsius, 3) relatively high and evenly spaced rainfall patterns, and 4) natural wind breaks. Visits were made to Kitale, Kisii, Kericho, Njoro, Thika, the Coast, Eldoret, and Vihiga. He examined existing French-bean production for processing or export, noting the insufficient collaboration between farmers and buyers and inadequate use of fertilizers and chemical '13)

Bintein gave little consideration to the prospect of establishing a large estate to grow French beans. Labor recruitment and supervision problems ruled out this option. On larger horticultural farms in Kenya nearly all harvesters of French beans are migrant women, many of whom are single. The social problems accompanying large-scale deployment of such a labor force have proven to be large.(14)

There was hope, however, that medium-scale farmers would provide the factory part of their output. The prospect of getting such farmers to grow exclusively for the factory was

rather grim as many such farmers were being sought after by exporters of fresh French beans who offered 2 1/2 to 3 times the price that the factory would offer. Past efforts by Wadhwa to recruit medium-scale farmers to grow beans for processing had proven unsuccessful.

The only group of farmers for whom growing beans for processing would appear highly attractive would be smallholders with limited cash crop options and with sufficient family labor to carry out the necessary husbandry-intensive techniques for high quality French beans on a very small scale. This issue is further discussed in the section below entitled "smallholder participation."

Indeed, Bintein decided that the most appropriate area for production would be Vihiga in Kakamega District, Western Province. This area not only possessed the physical and socioeconomic characteristics noted above, but it also lay a considerable distance from any important French-bean market, thus reducing the risk of "leakage" of beans onto alternative markets. Approval to operate in the area was sought from the District Permanent Commissioner, the District Agricultural Officer, and the local government chiefs and subchiefs.

One of the few individuals to assist Bintein during his fact-finding trip was Wadhwa, and this led Bintein to incorporate Wadhwa into the project being developed. Wadhwa would be responsible for financing a Vihiga-based production control unit called Hortiequip Ltd. and would share in the profits of the overall Kenyan operation. Kabazi Cannery showed little interest in working further with Wadhwa or in expanding their capacity to process French-beans. An alternative partner was identified. A prominent Nakuru-based businessman (dealing in building supplies), T. K. Patel, had acquired a small canning factory in Njoro in 1978. It was operating periodically employing 20-40 people, canning peas and beans in tomato sauce for the local market.

In December 1981 an agreement was signed between Saupiquet and Patel whereby Patel would finance capital investment in an expanded factory and cover the operating costs of the factory. Saupiquet would provide technical assistance in remodeling the factory, manage the factory and the raw material production operation, market all factory output, and guarantee Patel a minimum return on his investment.(15)

Project Location

Kakamega District is divided into ten administrative divisions. The French-bean project has operated in three of these--Vihiga, Hamisi, and Ikolomani. The District (and the divisions where the project operates) is characterized by three

main features: 1) high agricultural potential, 2) high population density, and 3) high rate of labor out-migration.

Kakamega District lies in a zone of high agricultural potential. Of its total 3520 sq km, about 3250 sq km are arable. Rainfall varies between 1250 and 2000 mm with a less than 10 percent probability of obtaining less than 750 mm of rain in a year. Rainfall is generally adequately distributed with no major dry season. Rainfall maxima come in April/May and August/September.(16) The area's geography and climate are thus highly suitable for growing vegetables.(17) A Ministry of Agriculture report warns, however, that the high rainfall pattern provides a breeding ground for pests and diseases and that hail is a hazard in the area.(18)

The population density of the District was 295 per sq km in 1979 and estimated at 349 per sq km in 1983. The divisions with the three highest population densities are those where the project is based. In 1979 the population densities were 692 per sq km in Vihiga, 612 per sq km in Hamisi, and 402 per sq km in Ikolomani.(19) Martin (1985) notes that according to colonial officials, the Vihiga area already had a population density of 450 per sq mile in 1919. One group of researchers claims that the population density of Vihiga is probably as high as any rural location in eastern and southern Africa.(20)

From the early part of the colonial period this region has served as a labor reserve. Martin argues that this pattern arose from a combination of the following factors:

- 1) the colonial ban on African export crop production;
- 2) increasing land pressure;
- 3) neglect of agriculture by the colonial government during the 1930s and 1940s; and
- 4) an anti-capitalist ethic engineered by Quaker missionaries based in the area.

Referring in 1960 to the area where Vihiga lies, Elspeth Huxley stated that "Maragoli has become a sort of dormitory area for places as distant as Mombassa and its communities return for a month or two every year after harvest to drink millet beer and produce a new crop of babies."(21)

The high rate of out-migration has created anomalies in the local labor market. In the 1984-88 Kakamega District Plan it was estimated that out of a workforce of 482,484 in 1983, 276,293 or 57.2 percent were outmigrants. A large proportion of migrants are male, leaving the majority of productive labor in the District to be provided by women, children, and older people. While for Kenya generally the sex ratio for the population 15-49 years of age is 105 females per 100 males, for Kakamega it was 134-100 in 1979 and 126-100 in 1983.

Martin argues that "agriculture has ceased to be a sufficient source of income and households have become more and more dependent upon income from wage labor." While agriculture has been poorly developed it has "been a cushion against the vagaries of labor demands" and thus prevented the marginalization of the population.(22) Martin presents survey results showing that the proportion of household income in Maragoli deriving from off-farm activities rose from 77.5 percent in 1969 to 84.5 percent in 1977.

The survey results did show considerable differences among sub-groups, with those households with more than 7 acres getting 91 percent of income from off-farm activities compared to 78 percent for those with less than 3 acres and 58 percent for those with 3 to 7 acres. While larger landholders tend to find off-farm employment in teaching or the civil service or else operate their own small business, off-farm income for smaller farmers tends to come from employment in the Mumias Sugar scheme, the Webuya Paper Mills, the Nandi Hills tea estates, or work in Nairobi or Nakuru.(23)

Smallholder Participation

The number of farmers participating in the project has expanded significantly since its initiation, as seen in Table 6 below. The company has sought to control farmer participation, firstly through the specific sublocations where it establishes collection centers, and secondly through endeavoring to achieve maximum control over the distribution of production inputs. The locating of collection centers is critical as the cost and availability of motor transport limits farmers to delivery points only within close proximity to their farms. Control of inputs begins with the distribution of seed with exact seed allocations made to individual collection centers based on the number of farmers whom the center's extension agent (i.e., the "control clerk") has registered. When seeds are distributed the farmer signs a contract with the company, her name and ID number is recorded, and a "farmer card" is issued on which subsequent input and crop transactions are recorded. The French-bean variety used is Vernandon. This variety is not commonly used in Kenya and thus there are few alternative sources of seed. Farmers need not show a land title when obtaining a contract.(24)

Approximately 70 percent of the farmers participating in the project are women. This is perhaps not surprising given the incidence of male out-migration and the significant number of farms that are managed by women. While in the early years of the project many of the farmer contracts were signed by the husbands, more recently women themselves have signed for the contract and their ID number is noted on the farmer card.(25) This change is significant since payment is made to the person whose ID number is on the contract.

Table 6: Farmer Participation

Year/Season	Number of Farmers
1982	1,000-1500
1983 (first season)	3,290
(second season)	3,397
1984 (first season)	10,359
(second season)	12,686
1985 (first season)	13,526
(second season)	15,765
1986 (first season)	12,078
Kisii area	3,466

Source: Hortiequip Ltd.

The widespread participation of women in a production system involving extension and credit is significant and a departure from past patterns in the Vihiga area. Staudt (1977) found that there was a severe bias against women in Vihiga in the delivery of government agricultural services. This bias held even when controlling for economic standing, size of landholding, and demonstrated interest in adopting agricultural innovations. She found that 98 percent of government agricultural field staff were men and that communications between women farmers and male extension staff who are not related by kinship frequently aroused suspicion, especially when the husbands were absent. She found that 49 percent of female-managed farms were never visited by extension staff while 28 percent of jointly-managed farms were not visited. Attendance by women at demonstration sessions and training courses was also considerably lower than for men. She found that 99 percent of women on female-managed farms knew nothing about the procedures for a loan application even though an Agricultural Finance Corporation program had been active in the area for three years prior to the time of her survey. Women felt that since they lacked a regular salary and since they themselves did not hold the land-title deed, agricultural credit was not open to them. Staudt summarizes that "a large part of the bureaucracy's clientele, who are women, are in effect ignored." (p.2)

To establish a brief profile of the Vihiga-area farmer participating in the project we have drawn from results of surveys carried out by Mcock (1971) and Staudt (1977), and we carried out a survey of 21 participating farmers. The farmers interviewed in our survey were drawn from five different sublocations that vary in 1) their length of time in the project, 2) their level of farmer yields, 3) their location, and 4) their proximity to major roads. Farmers selected for interview also represent a cross sample based on relative yields for the in-

progress 1986 second season. Farmers were drawn from categories of "high," "medium," and "low" performance for the season.

Both Moock and Staudt found median landholdings per household to be 2.5 acres. Moock found that 39 percent of households had 2 acres or less and 44 percent had between 2 and 5 acres. The farmers in our survey had the following landholdings:

Table 7: Landholdings in Vihiga Survey

Area	Number of Farmers
1 acre or less	8
Between 1 and 2 acres	8
Between 2 and 4 acres	3
More than 4 acres	2

Multiple fragmented holdings have been common in this area. In Moock's survey 38 percent of farms consisted of more than one piece. In our survey only 2 of 21 households had more than one plot, but several farmers did report having sold plots in the past five years. Most Vihiga farms have a considerable number of people living on them. Moock found that 56 percent of farms had 7 or more people. This actually may be difficult to access as one commonly finds holdings where parents and the families of their sons are resident with the land being divided up amongst the "households" but with children and family labor "migrating" throughout the holding.

A common finding of investigators of the Vihiga scene is the paradoxical condition that in an area with extreme population density, there remains considerable uncleared arable land. Moock estimated that 12 percent of Vihiga farmland was uncleared, 80 percent of which was arable. It is generally argued that labor, not land availability is the prime determinant of cropping acreage. (26)

Maize and local dry beans are the most important crops, with subsistence requirements taken first and surpluses sold in local markets. Hybrid maize has been widely adopted. Cash crops generally consist of small plantings of coffee, tea, sunflower, cotton, cooking bananas, and vegetables. In our survey 8 of the 21 farmers also grew vegetables (cabbages, onions, kale) for sale, followed in incidence by coffee (7 farmers), bananas (5), and tea (3). Five of the farmers grew no other cash crops than French beans. These farmers had an average holding of only 1.1 acres. Those with some coffee and/or tea tended to have slightly larger holdings than the average, with coffee growers having an average of 2.86 acres and tea growers 4 acres. Until the mid-1960s, farmers with less than 7 acres of land were not permitted to grow coffee. (27) Fluctuating prices and delays in payment have

restricted smallholder interest in coffee with 1982 Kakamega District production of the crop being less than two-thirds of its level for 1969.

Small acreages and the considerable extent of hilliness and rockiness limit the scope for mechanizing farm practices. All activities from land preparation through planting, weeding, and harvesting are done by hand. Small acreages, cash constraints, and the availability of family labor (generally women, children, and older people) limit the incidence of hiring agricultural labor. Mook found that only 18 percent of households have paid part-time labor and only 8 percent have paid full-time labor. In our survey 8 of the 21 farmers hire workers part-time with work focusing on the picking of French beans, coffee, and tea. Most of the women interviewed said that their husbands were working on tea estates in Nandi Hills or Kericho or that they were resident in Nairobi. Casual empiricism suggests that many of the men participating in the project are either not in the general labor force (i.e., over 60 years or less than 18) or are in the process of making a transition between obtaining income through seasonal work elsewhere and settling on the farm and perhaps using some savings to establish a local business.

Past efforts to organize vegetable production under contract for processing proved unsuccessful in Vihiga. Kabazi Cannery attempted to obtain tomatoes from Vihiga smallholders in the mid-60s, but local market prices sometimes reached 5 times that offered by Kabazi, and these opportunities outweighed the consideration of a guaranteed market outlet.(28) A local factory that extracts papain from papaya has been unable to organize consistent supplies of raw materials and has relied primarily on seasonal surpluses that then render the factory's price competitive with the local fresh market for papaya.(29)

Experience prior to and after the initiation of the project suggests that only farmers with extremely small landholdings, with available family labor, and with limited cash-crop and wage-labor options would find the growing of French beans for processing economically interesting. The income earned would barely cover the labor costs of a commercial or smallholder farmer using hired labor. Only where farmers do not value family labor at the market rate does the production prove economically interesting. This can be seen below where we calculate the implicit labor cost for growing 1 kilo of French-bean seed during a season and then compare this with average net earnings from the project. Estimations for labor input, length of work day, and the cost of hired labor are drawn from farmer survey responses. This estimation is rather crude, as considerable variations in effort (particularly in harvesting) are observed.

Table 8: Estimated Labor Input and Implicit Labor Costs for French Beans in Vihiga

Activity	Quantity	Cost (10 sh per 7-hour work day)
Land Clearing	1 day	Ksh 10
Ridging	1 day	10
Cleaning/Planting	4 hours	5.71
Weeding	12 hours (3 by 4 hours)	17.14
Fertilizer Application	4 1/2 hours (3 by 1 1/2)	6.43
Stick Support	1 day	10
Bean Picking	72 hours (36 days by 2 hours)	102.86
Transporting/Sorting	18 hours (36 days by 30 min.)	25.71
Total		Ksh 187.85

Thus, we find that the implicit labor cost for growing French beans over a three month season is Ksh 187.85. It is important to note, however, that a majority of farmers do not yet perform the practice of setting up a stick support system for the beans. When comparing net earnings with labor costs we shall deduct the Ksh 10 for this activity. Picking is by far the most important item in the above costing. Two hours per day was the most commonly reported level of effort, although picking time may vary between 1 hour and 3 hours per day depending on the development of the crop. The time spent carrying beans to collection stations, sorting the beans, and having them weighed and receipted is again an average figure with actual timing depending on distance travelled, the number of farmers at the collection station, and even the degree of trust between a particular farmer and the center's quality inspector. The intensity of quality inspection varies from farmer to farmer.

Let us now compare this implicit cost of labor (or cost for having hired labor work on the beans) with the average income for farmers participating in the project. To obtain average income we made the following calculation:

(Price x Average Yield Per Kilo of Seed) - Value of Inputs Loan

For 1985 and 1986 we use a rate of 10sh/day for the cost of labor while for the three preceding years we use 7.5sh/day. For labor costs we have deducted the cost of constructing stick

supports. Labor cost totals are thus Ksh 133.4 for years 1982-84 and Ksh 177.9 for 1985-86.

Table 9: Average Income Versus Implicit Labor Costs

Year	Average Income	Implicit Labor Cost
1982	-0.23	133.4
1983 (1st season)	17.96	133.4
(2nd season)	106.17	133.4
1984 (1st season)	155.1	133.4
(2nd season)	235.7	133.4
1985 (1st season)	137.3	177.9
(2nd season)	190.5	177.9
1986 (1st season)	162.8	177.9

Of course, labor costs will vary with harvesting effort that in turn will influence yields. Thus, implicit labor costs may be lower than average for those getting poor yields and higher for those with superior yields. However, taking our crude estimation for illustrative purposes we find that farmers obtained a cash income exceeding the implicit cost of their labor only in three of the eight seasons or years in which the project has operated. This suggests the economic infeasibility of hiring labor solely for work on the French beans for processing. When calculating for the different seasons the yield required for a farmer to cover not only the value of the inputs loan but also her implicit labor cost, we find a range of 71.3 to 88.2 kilos per kilo of seed. On an acreage basis this would be 1426 to 1764 kilos. The latter figures are not far below the average yields for French beans in Kenya and generally higher if one deducts the output of fine beans and takes only the output of extra-fine beans from a plot of French beans. Thus, larger farmers who will generally have higher labor costs than the 10 sh./day rate in Vihiga and will have labor supervision costs are unlikely to find growing French beans for processing economically interesting.

Basic Organizational Structure and Components

Here we discuss the basic structure of Hortiequip's contract farming system. Its organizational structure considerably matches that which was developed at Saupiquet's operation in Morocco. In the early stages of the project many of the company's policies also matched those adopted in Morocco. Certain cultural practices, the terms of company-farmer contracts, and the technical package comprising seeds, fertilizers, and chemicals were all transferred largely intact. Even today the overall organizational structure remains virtually the same. However the operation of the system has undergone considerable change since the project was initiated with the company adjusting its package of incentives and its control

mechanisms for farmers and for staff. These adjustments were necessary as the company found that it was not adequately in control of its organization and not generating the expected farmer-productivity results. The company also found that it was unable to enforce the terms of its contracts and unable to prevent costly "leakages" out of the system. While the transaction costs inherent in an organization incorporating large numbers of smallholder farmers are necessarily high, unexpected transaction costs arose that necessitated a company response. In this section we outline the basic components of Hortiequip's system. In the subsequent section, where we discuss the performance of the project, we will identify institutional changes made by the company.

a) Function---

The prime function of Hortiequip is to meet the raw material requirements of the Njoro factory both in terms of quantity and quality and to minimize the costs of raw material procurement. Hortiequip is not expected to earn a profit on its own operations. The strategy adopted by Hortiequip is to disperse supply risks and spread project benefits by incorporating large numbers of smallholder farmers.

b) Form of Transactions---

Hortiequip's prime mode of transaction is contractual relations based on a season or year. The company enters into a contract with each farmer, staff member, and transporter individually. Formal contracts are supposed not only to assign rights and responsibilities, but to engender a perception of continuity and common interest and effort. Rather than seen as an alternative to trust, contracts are viewed by the company as the frameworks in which to develop relationships based on trust.

c) Method of Organization---

The basic structure of the Hortiequip operation is that of a pyramid with information, inputs, and harvested product flowing through a hierarchical system, with quality-control points being located at several levels in the hierarchy. The structure of the pyramid is as follows:

General Manager (1)

Field Manager (1)

Supervisors (4)

Control Clerks (60-80)

Farmers (12,000-16,000)

Farmers receive general information about the project in barazas called by their local Chief. All subsequent information will be provided by a control clerk who acts as technical adviser, inputs supplier, and general on-farm production overseer for the farmer and company. Each control clerk recruits and is responsible for approximately 200 farmers (plus or minus 50). Each control clerk operates out of a specific collection center to which all their farmers come for inputs and French-bean deliveries. At each collection center there are individual staff members responsible for a) sorting inspection, b) weighing beans, and c) issuing ticketed receipts to farmers.

Control clerks are to instruct farmers how to prepare their land for the planting of French beans. Company specifications are particular, i.e.:

170 sq meters of land well dug and properly cleaned with a fence of 5 rows of maize around it. The plot should have ridges 20 cms. high, 30 cms. wide and 80 cms. apart. There should be no rocks, trees or any other crop or plants in the plot.

The control clerk is to inspect the farm before issuing seed and having the farmer sign the contract. Farmers are told when to plant. Control clerks are issued a top dressing fertilizer (C.A.N.), and they must instruct farmers in its application. Urea is supplied to the control clerks in three installments and this must be distributed to farmers and its use explained. Four chemical sprayings are undertaken during each crop by hired workers under the supervision of the control clerks. When the beans are ready for harvesting the control clerk is responsible for ensuring that harvesting is done every day and that pods of the proper size and quality are picked. Thus, the control clerks play a vital role in the Hortiequip system, not only filtering inputs and information down to the farmers, but also feeding information upward in the hierarchy. The proper execution of the

control clerk's job is thus vital to individual farmer productivity and the overall performance of the project. (30)

Initially Hortiequip trained 60 local people to be control clerks. Many of these were people recommended by chiefs and subchiefs. Most had some secondary school education and had no past record of crime. Most were 18-20 years of age. Trainees were taught the basic stages in the production of French beans, warning signals for plant disease, and the standard operating procedures of Hortiequip. In subsequent years new control clerks generally have worked in some other capacity for the company (i.e., as chemical sprayers) for perhaps two seasons and have been recommended by a local authority figure. These are the methods of "screening" potential staff for responsible positions. An important unresolved issue within the project concerns who is actually responsible for the behavior of control clerks. Is Hortiequip responsible as the clerks are its employees, or are the local political officials who recommended them responsible? Where a control clerk has committed a crime (i.e., sold spraying equipment belonging to the company) can the company fire the individual and take them to the police or is the political official's consent required? A difficulty arises in that when a local staff person commits some crime or fraudulent act and a local political authority is considering taking disciplinary action, typically strong local and family pressures are applied to the official not to take action. This type of case reduces the overall deterrent value of company policies to minimize staff abuses of the Hortiequip system.

The ratio of farmers to control clerks has increased during the course of the project, but appears now to be near the level of 200 farmers per control clerk, which the company considers optimal. Changes in this ratio can be seen below:

Table 10: Farmers per Control Clerk

1982	56-83
1983 (first season)	110
(second season)	92
1984 (first season)	148
(second season)	249
1985 (first season)	218
(second season)	188
1986 (first season)	183 (193 at Kisii)

Source: Calculated from Hortiequip Records

Supervisors are responsible for an area that will incorporate 20-30 collection centers. Based on the number of farmers each control clerk has, the supervisor will request the necessary quantity of seed and other inputs, and this is delivered to the collection centers. Supervisors visit each of

their control clerks each day and issue daily reports to the field manager indicating problems, actions taken on prior problems, and various indicators of farmer and staff performance. The field manager assesses general patterns and problems in production and may target additional supervision or other remedies to areas experiencing problems. The field manager together with the general manager carefully monitor the quality of the delivered beans and act on quality-related problems as identified at collection stations, at the Hortiequip main center, or at the factory. The general manager oversees the activities of the Hortiequip farmer-accounts unit, the inputs-supply unit, the local transport arrangements for beans collection, and the dispatch of beans from the Hortiequip to the factory. The general manager is in steady contact with the overall project manager, Mr. Bintein.

Absence of Intermediaries

No intermediary organizations are involved between the farmer and the company. Neither cooperatives nor traders come between the farmers and the company for input supply or product marketing. The company has sought to minimize the extent of government involvement in the project, fearing that such involvement would reduce the flexibility of decision-making and the performance-based orientation of the company. The company has required the support and sometimes the assistance of the district agricultural officer and the local chiefs. Assistance from chiefs has been needed in disciplining negligent farmers, fraud-committing staff, and various opportunists trying to undermine the project. While initially official extension officers were used to assist, inaccuracies in advice and requests for remuneration led the company to decide to utilize strictly its own hired staff.

The absence of any intermediary organization between company and farmers has several implications. Farmers have no institutionalized channel to render their grievances other than through their control clerk. Within the confines of the project, farmers have no capacity to influence company decision-making; individual farmers have no bargaining power. The information that they pass on to control clerks is likely to have a high dissipation rate before reaching senior staff members. This is especially the case if the information relates to the behavior of the control clerk.(31) Control clerks are not supposed to represent the farmers in the sense of presenting farmer positions and bargaining with the company over the issues. Control clerks acting in such a way are in danger of being perceived by the company as being "trouble-makers."

Lack of institutionalized representation has led farmers to make greater use of political channels to voice their complaints. At barazas called by local government authorities and KANU party

officials, farmers will discuss problems they have related to the project. In this manner one event or one problem that a few farmers have faced may become blown up into a larger issue between the politicians and the company.

The absence of a farmer representative body is also likely to reduce the company's capacity to enforce its contracts with farmers and staff. For the company to sanction negligent farmers or negligent or fraudulent staff it generally must go through political and then police channels. There is no institutional mechanism to bring social pressure on the offending party from within the project. While the company has been able to instill in participants some feeling of joint effort and cooperation, this attitude has not been nurtured in the direction of mutual self-government of the project.

Planting Seasons and Input Loans

Over the past four years the production of French beans has taken place over two distinct seasons per year. With the short rains in March comes the first planting for harvesting from May to early July. The second planting is to accompany the long rains in September for harvesting in October and November. Both the cost of inputs and the producer price are set at the beginning of the year and carry through for both seasons. An input package accompanies each one kilo of seed and is costed on such a basis. While the company does maintain stocks of certain inputs (largely due to uncertainty of their timely availability), the company still must bear the risk of changes in the procurement cost of fertilizers and chemicals throughout the year. Table 11 breaks down the inputs loan for 1985.

General Performance Indicators

In this section we present data depicting various dimensions of project performance. The data relate to such results as company sales and earnings, employment, farmer yields and income, producer prices, and loan recovery. The prime causes of variations in performance by year or season are discussed in the subsequent section where we examine changes in the project chronologically.

Sales and Earnings

One indicator of performance is the growth in company sales. For Njoro Cannery all sales are exports to Saupiquet. In the table below we give both the Kenyan Shilling value and the US\$ equivalent of export sales. The dollar value is given so that the effects of the Kenyan Shilling devaluation since 1982 are not hidden.

Table 11: Input Loan (1985)

Input	Quantity	Cost
Seed	1 kg	Ksh 51.00
N.P.K.	5 kgs	27.65
D.A.P.	1.2 kgs	8.06
Furadan	330 gms	11.40
C.A.N.	1.2 kgs	4.99
UREA	2.4 kgs	13.80
Chemicals	4 sprays	36.15
Total for 1 kilo seed		153.05
Rounded off to		153.0

Table 12: Company Sales

Year	Sales (Ksh mills.)	US\$ Equiv. (Mills.)
1982	6.1	0.56
1983	14.0	1.05
1984	27.0	1.87
1985	40.3	2.45

Source: Njoro Cannery

From this table one can see the steady expansion in sales recorded by the project, which provided added foreign-exchange earnings for the country. On the other hand, on account of capital investments of nearly Ksh 31.8 million over the 1982-85 period and subsequent deductions for depreciation, the company has registered operating losses in each year. Thus corporate tax was not paid over the 1982-85 period. However, these "accounting" losses do not threaten the financial viability of Njoro Cannery. The company's owner is guaranteed by Saupiquet an income equivalent to a certain percentage of f.o.b. sales volume. This sum more than adequately covers the company's "accounting" losses.

Employment

Another indicator of company performance concerns employment. The data available do not provide a breakdown between full- and part-time staff. Most of the field staff work between 6 and 8 months/year. The data do indicate considerable growth in employment. The location of employment in Njoro and Vihiga is of major importance given the relative absence of salaried employment in both of these areas.

Table 13: Company Employment

Year	Factory Staff	Field Staff
1982	100	50
1983	250	100
1984	800	300
1985	850	350

Source: Njoro Cannery

Farmer Productivity

A third set of indicators of project performance concerns trends in farmer productivity and the level of productivity of participating farmers relative to French-bean growers elsewhere in Kenya. Data for average farmer yields are presented in the table below:

Table 14: Project Farmer Yields

Year/Season	Yield (per kilo of seed)	Yield (on acre basis)
1982	28.17 Kgs	563 Kgs
1983 (1st season)	42.64	853
(2nd season)	69.37	1387
1984 (1st season)	83.43	1669
(2nd season)	106.46	2129
1985 (1st season)	77.4	1548
(2nd season)	91.6	1832
1986 (1st season)	79.44	1589
Kisii	61.0*	1220

Source: Calculated from Hortiequip records.

*Kisii yields are per farmer, not per kilo of seed.

We should note here that the output of both small-scale (less than 1 acre) and medium-scale (2 to 10 acres) growers of French beans for fresh export has been largely within the range of 1620 to 2160 kgs per acre in recent years. This, however, is the yield of fine and extra-fine beans combined. A harvest of beans from one acre may consist of 60 percent extra-fine beans and 40 percent fine beans. If we ignore the considerable weight difference between fine and extra fine (i.e., 1 fine bean = 1.67 extra-fine beans) and simply take 60 percent of this yield range for extra-fine French beans by the leading exporter, we find an increase over this period of nearly 78 percent, with actual prices as follows:

Table 16: Producer Prices for Bean Exports

1982	Ksh 6.7/kg
1983	8.1
1984	8.9
1985	10.4
1986	11.9

Source: KHE Ltd. farmer vouchers

It is important to point out that Vihiga farmers are well beyond the range of fresh French-bean procurement systems, which are generally within a 150 km radius of Nairobi's international airport.

While we have already presented data showing the average income earned by participating farmers, we have yet to provide an indication of the total cash earnings of Vihiga farmers from the project. This is shown in the table below:

Table 17: Cash Income to Farmers in Vihiga

Year	Amount (Ksh)
1982	400,000
1983	800,000
1984	4,700,000
1985	5,750,000

Source: Njoro Cannery

The table shows that it was really not until three years into the project that a substantial amount of additional income was injected into the Vihiga economy. As we showed earlier, this is due to the low yields obtained in 1982 and 1983.

Inputs Loan Recovery

During both 1982 and 1983 a high proportion of farmers had output levels inadequate even to cover the input loan value. While we do not have the exact data, it is very likely that more than 50 percent of participating farmers had an outstanding inputs balance during the first two years of the project. What data we do have for these years looks at the total outstanding inputs balance as a proportion of the value of inputs loaned for different seasons. This can be seen in Table 18.

Table 18: Outstanding Inputs Balance Data

Year	Outstanding Balance Total Inputs (percent)	Number of Farmers with out- standing balance	Percent of Farmers with out- standing balance
1982	25.4		
1983 (1st)	32.9		
(2nd)	18.1		
1984 (1st)	11.7	2173	20.9
(2nd)	3.5	1041	8.2
1985 (1st)	6.0	2127	15.7
(2nd)	9.5	2787	17.7
1986 (1st)	10.6	2253	18.7
Kisii	21.4		

Source: Calculated from Hortiequip Data

The table shows that during 1982 and 1983 approximately one-fourth of the value of inputs loaned was not recovered by the company. Only for those farmers shown to have misused their inputs (i.e., sold them) would the company have attempted to enforce loan repayment. The actual number of these cases was small. Results for 1984-86 show that while there was a considerable decline in the proportion of total loan value left outstanding, performance has been somewhat unsteady.

More interesting is the sustained (or even rising) proportion of farmers who do not produce enough to earn any cash income. This is seen in the last column. This represents a measure of risk for participating farmers. While farmers new to the project have a higher rate of failure in meeting the break-even production point, other factors are also important. While variations in yield generally will arise from such factors as ecology, labor availability, farmer attention to the crop, and the effectiveness of control clerks, the experience of a crop failure or harvest of a very low yield are usually a result of climatic factors. During several planting seasons hailstorms have badly affected some production areas with the impact depending on the stage in the crop cycle. Hail that hits before actual picking begins may wipe out the entire crop. Lack or abundance of rainfall has also played an important contributing role in some crop failures. The company staggers planting times to expand the length of the processing season. This necessarily puts some farmers at greater risk as, rather than planting exactly with the onset of rain, their planting time may be scheduled too early or late to take advantage of the rains.

One farm visited clearly illustrated this weather-linked risk. The family has several members with their own plots of

French beans, although for a variety of reasons (e.g., illness, absence of family member, etc.) their timing of planting differed. Those who planted when first provided seed were obtaining good results with yields well above 80 kgs, but two family members who delayed planting for 7-14 days had virtually no yield. The two unfortunate members planted their seeds in soil dry from an absence of rain for over a week, and the plants were more affected by a hail storm that hit the area just before picking was to begin.

Impact of the Project

Certainly the most important impacts of the project are its injection of additional cash income into the Vihiga economy and its creation of several hundred full-time jobs both in Vihiga and at the factory. The project has also had secondary impacts in a number of areas. It has generated some technical overspill from the cultivation of French beans to the cultivation of maize, local beans, and vegetables. Participating farmers have increased their awareness of the positive impact of fertilizer and chemical use for crop yields, particularly for maize. They learned this through direct application of urea (the company's) on maize as well as through their rotation of the French beans with maize. More farmers are now applying manure or compost to their food crops.

Success in growing French beans in rows with ridges and with proper spacing has led many farmers to experiment growing the local dry beans as well as several vegetable crops with such methods. Results have generally been positive. An interesting side effect noted by several farmers is that while they may have had only limited contact with the official extension service in the past, their participation in the project has taught them "how to ask for advice" from extension workers.

The project has had some social impacts as well. By providing women with their own source of income, the project has increased the influence of many women over the handling and allocation of family financial resources. Increased sums have gone toward children's clothes and school fees. Several successful primary school building drives have been based on earnings from French-bean production. Some people argue that household conflicts over the use of income have been reduced because of the women's direct access to cash. Another impact of the project is that it has kept a number of people in the area who might otherwise had gone off to find temporary work elsewhere. Several chiefs report that the project has contributed to greater peace in their areas as people are kept busier and have less time to get into trouble.

The project's impacts have been broader than changes within its own confines. Njoro Cannery has obtained permission from a

European seed breeder for a local firm to multiply Vernandon bean seed in Kenya. This local firm has contracts with several dozen small- and medium- scale farmers in the Lotokitok area to multiply French-bean seed. In 1985 that firm had contracted for nearly 500 acres of French-bean seed. Although the production process for seed is not as labor intensive as that for fresh beans, this scheme certainly generated at least temporary employment for several thousand local people.

Income and employment spin-offs from the Njoro Cannery operation also derive from the factory's purchase of French beans from both exporters and Lake Naivasha medium-scale growers. When the European market for fresh beans is oversupplied or when air cargo space limitations create an excess supply condition, both exporters and larger farmers can sell beans to the factory at prices that can off-set the labor and overhead costs for these farmers and part of the procurement costs of exporters. This reduces the heavy risk of producing or exporting during the European summer as the farmers or firms will generally have a buyer of last resort. The maintenance of some level of "off-season" production has generated additional employment during this period.

Evolution of Performance and Institutional Arrangements

In this section we retrace the development of the contract farming scheme through a series of formative stages. This enables us to provide explanations for some of the variations in project performance over time and to discuss how the project's institutional arrangements have evolved.

Establishment

Hortiequip's contract farming scheme began in 1982. Results in that year would be nothing less than disastrous. Hortiequip faced unexpected weather and crop disease problems, lacked effective supervision over a staff and a group of farmers familiar with neither French beans nor contract farming, and struggled to implement a technical and organizational package borrowed from Saupiquet's Moroccan project but not fully appropriate in Vihiga. Borrowed from Morocco was a particular fertilizer and chemical "package" to be provided with each kilo of seed distributed. Also borrowed was the policy that farmers would be loaned as many kilos of seed as they thought they could manage. Plantings would take place at approximately fortnightly intervals in order to obtain a crop continuously over the year. For the first planting some farmers took as many as 15 kilos of seed, enough for about three-quarters of an acre of production.

Early plantings, involving several hundred farmers, were hit by a leaf rust disease that spread rapidly in some of the growing areas. Hortiequip was late in gauging the extent of the rust

disease outbreak. The official agricultural establishment could not provide advice on how to control the spread of the disease. Dutch agronomists working on a legume research project at Thika helped diagnose the problem but advised Hortiequip to have farmers uproot the entire first two French-bean plantings. The company feared that this would cause farmers to lose interest in the project as it would leave them with no income at all from their cultivating efforts. The crop was left in and a minimal yield was recorded.(32)

Throughout much of 1982 Hortiequip was focusing on organizing its physical facilities, its system of record-keeping and contracts, and its arrangements with local and other transporters to collect and then deliver beans to the factory. Production supervision and information feed-back were not yet sufficiently developed to enable the company to know the causes and extent of the disease problem. The activities of control clerks and chemical sprayers were not closely monitored. Area supervisors were acting on their own initiative and were not yet following any standard operating procedures for problem evaluation and reporting. Staff were being paid standard salaries without any built-in incentive system based on measurable performance.

The outbreak of disease and the occurrence of certain pests suggested to the company that either the chemical spraying staff were not performing their job or that the chemicals (or their particular strengths) were not appropriate for growing conditions in Vihiga. Questions also began to be raised about the appropriateness of the fertilizer regime that was based on the Moroccan experience. It was becoming clear that the company would need to initiate its own local-level research program in order to establish the soundness of its inputs package and to distinguish a technical problem from a problem of human negligence.

Not only was there an outbreak in disease, but it was slowly becoming apparent that farmers did not understand the heavy labor demands of growing French beans and that Saupiquet's experience with farmers in Morocco led it to misjudge the appropriate scale of production in Vihiga. Hortiequip was providing farmers with quantities of seed far in excess of what they could possibly manage. Some farmers began selling excess seed to others. As Hortiequip identified this problem it began to limit the quantity of seed to be loaned to each farmer for each planting. The first limit set was 6 kilos. This was later reduced to 3 kilos.

Farmers were provided with an input package of seeds, fertilizers, and chemical spraying. At the then prevailing inputs cost and producer price the farmers needed to produce 28.24 kgs of beans per kilo of seed simply in order to cover their loan. They would receive cash for yields over and above this level. What transpired was that many farmers did not deliver enough to cover the first input loan. Still they

expected some payment, either as an advance for the second planting or to cover their labor input. Many farmers did not really understand the nature of the contract. The contract was explained to farmers at barazas and then by the control clerk in their area, but uncertainty remained. The contract was written only in English and some farmers flatly refused to sign it. They feared that the paper they were signing would lead to the loss of their land. This had happened to several local farmers who had obtained loans from the Agricultural Finance Corporation but were unable to repay.

Farmers who had taken more seed than they could manage themselves had hired laborers to harvest the crop. These farmers thus had a cash deficit from their early bean crop. In order to prevent farmer disillusionment the company adopted a policy to have half the value of the farmer's delivered crop go toward recovery of the loan while the other half would be paid to the farmer in cash. Many farmers had their crop badly affected by the rust disease and then later in 1982 by a fungus arising from rapid bacteria growth during heavy rains. The level of rejected beans at the collection centers was thus high. In order to provide some incomes to farmers Hortiequip sometimes accepted non-processable beans and then provided these free to Kisumu area institutions (i.e., schools and hospitals). Actual enforcement of the contract's quality-related provisions was impossible for the company if it wanted to remain in operation. Debt collection would have been difficult and would certainly have led to farmer withdrawal.

For the year of 1982 (which included at least nine plantings) overall performance was poor. The average yield per kilo of seed supplied was only 28.17 kgs of beans, slightly below the figure needed merely to recover the input loan. Had the company not adopted the policy of paying the farmer for half of her deliveries, the average net income per kilo of seed would have been a credit note of Ksh 0.23. During the year Hortiequip provided inputs costed at Ksh 1,226,700 and at the end of the year the outstanding inputs balance was Ksh 311,195, amounting to 25.4 percent. During the year 12.3 tons of seed had been distributed with the company estimating that virtually no yield was obtained from 8 tons from this total. (33)

Reconstruction

1983 was a year of adjustments for Hortiequip. Several major policies were altered. Incentives and controls for staff were changed. Farmers with low productivity were either dropped by Hortiequip or exited on their own accord. One important decision that was made was that the project would operate only during two distinct seasons accompanying the short and long rains. Rainfall between these two seasons was not reliable enough to expect income-generating yields for farmers, while

attempts at encouraging small-scale irrigation activities were still in their infancy. To provide some dispersion of raw material supplies to the factory, each season would consist of two plantings staggered according to sub-area.

A second policy change related to an attempt to gain increased control over the distribution and application of inputs. Farmers would be restricted to a maximum of two kilos of seed per season, and most farmers would be given only one kilo of seed. During the first season of 1983 the average quantity of seed taken by farmers was 1.51 kilos. For the second season this dropped to 1.09 kilos. Control clerks would be provided only the quantity of seed needed for the farmers, which they had registered before the start of the season. Rather than provide farmers the total allocation of urea at one time, it was decided to subdivide the provision into three smaller lots so as to increase the proportion of urea actually going to the French beans rather than to the farmers' maize or vegetables crops. Staged urea distribution would also prevent the practice of applying urea all at one time rather than spaced over various points in the bean growth cycle.

Uncertainty over the actual performance of chemical spraying led the firm to adopt a practice whereby both the control clerk and the farmer had to sign the farmer's card at the time of each of the four chemical sprayings. An incident arose where the company was accused of using dangerous chemicals after a sprayer had apparently sold some insecticide that was subsequently sprayed on cows. The cows died.

Getting the technical package right was also a focus in 1983. Trials with different seed varieties and different chemical and fertilizer applications were developed on farmer and demonstration plots. Assistance was sought from the Dutch advisors at the National Horticultural Research station as well as technical advisors from Saupiquet. It was not until the end of the year that the company had become confident in its inputs package. (34)

Efforts were also made to improve quality monitoring throughout the system and to more firmly base staff salaries on performance. Delivered beans were to be examined for quality throughout the chain to the factory on the basis of collection center code number. In this way quality problems could be countered by location-specific remedies. Remuneration of control clerks was changed from a basic guaranteed salary to a system with a basic salary together with flexible (and rather significant) bonuses and deductions according to individual behavior and farmer performance.

For the first season of 1983 15 new sub-areas were added, and three low-performance areas from 1982 were dropped. The

number of participating farmers more than doubled over the 1982 levels. Farmer performance during the season was generally poor. In fact 18 of the 30 centers had average yields below the 37.2 kilos needed merely to cover the loan. The overall seasonal average yield was 42.64 kilos, bringing an average net income of a paltry Ksh 17.96. At the end of the season the outstanding input loan balance was 32.9 percent of the total loan value. Unexpectedly, new entrants into the project performed better than those who had participated during 1982. Each of the four highest yielding stations were new for 1983.

There is some evidence that the staggered planting system adversely affected certain areas. Collection centers were divided into two regions with each region planting at slightly different times. Region "A" recorded an average yield of 61 kgs while region "B" recorded an average yield of only 25.4 kgs. Since new and old collection stations were included in both regions and since there is no clear geographical or ecological divide between the two regions, one can only conclude that rainfall patterns were such that the scheduled planting time for region "B" was either too early or too late.

Between planting seasons of 1983 a considerable "shaking out" occurred in the participants in the project. Six collection centers were dropped and thirteen new centers added. Several of the dropped centers had actually performed rather well in terms of factor yields. Problems of an "attitudinal" nature were encountered either in the form of control clerk drunkenness or fraud, or disagreements between the company and local authorities. Examining the 18 collection centers that had average yields below the figure necessary to cover the loan, one finds a drastic reduction in farmer participation during the second season. Three of these centers were dropped completely while in some centers there were as little as 1/10 the participants in the second as in the first season. Farmer participation in these 18 sub-areas dropped from 1514 farmers to 510 farmers during 1983. From this information, one might estimate that 1/3 of the project's participants exited during 1983. The vast majority of these farmers were those who received no income during the first season and may have held an outstanding loan balance.

Performance during the second season of 1983 improved considerably and provided the first sign that the organizational structure of Hortiequip could generate results with smallholder farmers. Average yields per kilo of seed were 69.37 kilos, and four of 37 collection centers had total averages exceeding 100 kgs per kilo of seed. The magnitude of outstanding loans showed a major decline and represented 18.1 percent of the total value of loans.

Expansion and "Migration"

Having built confidence both in the functioning of its organization and the technical package it was offering farmers, Hortiequip moved over the 1984-1986 period to expand the size of the project considerably, to diversify its operating areas and to raise overall productivity. It obtained at least qualified success in each of these objectives. Through additional investment, the processing capacity of Njoro Cannery was expanded. Greater effort was thus put into expanding the period of raw-material supply and maximizing the actual quantity of raw material that would be processed and canned.

During the first season of 1984, 33 new collection centers were added and the level of farmer participation was tripled to over 10,000. By the end of 1985 a further 50 percent rise in the number of farmers had taken place to reach a level of nearly 16,000. In addition to new collection centers in Vihiga and Hamisi Divisions, operations began in Ikolomani Division of Kakamega District. An effort was made in late 1985 to expand the project to the Bahati area in Rift Valley Province, but this proved unsuccessful and was subsequently dropped. In 1986 the project initiated an operation in the Kisii area, contracting over 3000 farmers there; however, a consolidation of the Vihiga operations of Hortiequip reduced farmer participation numbers there and left total participating farmers at slightly below the 1985 maximum.

The first season of 1984 featured a tremendous productivity improvement over the prior season. Average farmer yields were 83.43 kilos and 21 of 70 collection centers registered average yields in excess of 100 kgs per kilo of seed. The outstanding input balance fell to 11.69 percent of the total loan value. The vast majority of participating farmers earned a reasonable income. Officials from several locations requested that the company establish a collection center in their area.

Despite the improved performance, the company was becoming worried by a pattern of deviations between the weight of beans as recorded and receipted at the collection centers and the weight of the beans as recorded at the Hortiequip central office. As the company is responsible for paying farmers according to the receipted weights, this leakage would be a cost borne directly by the company. The scale of the problem would take on greater magnitude during the second season.

The second season of 1984 brought the appearance of the highest level of productivity yet recorded for the project. Between seasons the company had dropped centers that were performing poorly for either ecological or "attitudinal" reasons. The number of farmers linked to control clerks with superior performance was increased. During the second season average

yields at several centers exceeded 150 kgs. Nearly half the control clerks had groups of farmers without a single shilling of outstanding inputs balance. Over Ksh 3 million was paid out to farmers during this season.

While farmer productivity had undoubtedly improved significantly during the season, this result was perhaps overshadowed by the tremendous discrepancy found between farmer-receipted yield and actual deliveries of beans. The receipts farmers were obtaining from collection center staff were showing a higher number of kilos than the farmer was actually bringing to the center. Sometimes the total discrepancy between the weight as recorded at the centers and as checked at the Hortiequip base office would be 5 percent while at other times it might be as high as 10 percent. For 1984 as a whole more than 120 tons of produce was overrecorded by collection center staff. This equalled 5.4 percent of total deliveries and cost the company Ksh 420,000 or over 1 percent of its total operating costs for that year.(36) This large payment for beans never delivered led Hortiequip again to operate at a loss despite substantial farmer productivity gains.

Naturally this issue is highly sensitive, and participants are not prepared to discuss it, but it is necessary to speculate on the factors that led many farmers and staff to collude in an effort to extract additional income from the company. One fairly weak hypothesis is linked to the 1984 drought which affected several major agricultural areas in Kenya. The suggestion is that numerous farmers in the project had family members who experienced a decline in their migrant wage earnings, and this created an increased demand for cash-crop income within Vihiga. "Beating" the Hortiequip system appeared to be the easiest method.

A more plausible hypothesis relates the fraud to the changing of local attitudes toward the project. The considerable expansion and improved performance of the project in 1984 was providing participants and other local people with the perception that the company was earning substantial profits. Several local individuals including people in "high places" were voicing the opinion that the company was "exploiting" participating farmers, paying them an inadequate price for their beans. As some of Hortiequip's senior management staff were Asians, Hortiequip was increasingly being described as a typical "middleman" operation profiting "on the backs" of farmers. Most people did not understand that Hortiequip staff are merely employees of Njoro Cannery.

An attitude of suspicion was adopted by an increasing number of farmers. Farmers complained that Hortiequip was taking their rejected beans and then selling them at high prices in Kisumu. As a result, the company had to stop its practice of

distributing beans free to local institutions. Some farmers and staff must have decided that they could effectively redistribute company earnings through their own initiative. This form of income redistribution may not have appeared too devious as, after all, the company was being approached by many officials to donate sums of money to social and political causes (or provide jobs to certain people), and why shouldn't those actually generating the wealth be better remunerated. Rather than acting on behalf of Hortiequip, some staff formed a quasi-alliance with farmers in order to extract additional income.

The weight overrecording was the most graphic although certainly not the sole method by which farmers sought to beat Hortiequip's system. Farmer attempts to add rocks or weeds to their bags of beans to increase weight were certainly not rare. A less devious and more common practice has been for farmers to retain a certain proportion of bean pods on the plants in order to produce their own seed for use in subsequent seasons. Whether planting additional seed actually brings the farmer higher yields is uncertain. The company's chemical sprays and fertilizers are calculated on the basis of one kilo of seed, so these inputs will be required to do "extra work" on a field larger than 170 sq eters. The risk of pest or disease attack probably increases. Farmer seed multiplication may be one of the most important factors contributing to the greater incidence of seed-borne diseases in the project over the past several seasons.

Despite the losses incurred by Hortiequip and recorded in the annual financial statement of Njoro Cannery, the expanded volume of production during 1984 increased the turnover and profits of the overall production and marketing operation (including distribution in France).

Several changes in the scope of the project occurred in 1985. Capital investment of over Ksh 14 million was made in expanding the capacity of the factory and in putting in a canning line for celery hearts. This celery line would later be dropped due to its unprofitability. Late in the year an attempt was made to encourage medium-scale growers at Bahati to grow French beans so as to obtain a crop for the factory for several weeks after the end of the Vihiga second season. Over 2000 farmers were contracted, some with up to 4 acres under French beans. While the ecological conditions proved appropriate, inadequate labor was available for picking. As a result farmer yields and income from French beans could not compete with alternative crops.

During 1985 Njoro added a product line for fine beans because at the beginning and end of each planting season the company was getting a significant proportion of beans that were not extra fine. Over the course of an entire season perhaps 15 to 20 percent of beans delivered to the factory from Hortiequip

are not extra fine. This raw material has to be utilized to lower wastage costs, hence the development of the fine bean line.

In 1985 the company announced a policy that if there were further discrepancies between receipted produce weights and actual deliveries, then the company would deduct an equivalent amount the following day from the offending collection center. The company repeatedly warned that the practice of overrecording deliveries could undermine the existence of the project. While this policy was never actually implemented, it did serve its deterrent role. Weight differentials totaled only approximately 10 tons in 1985. The cost of this level of discrepancy was less than the level of company donations to local political functions that year.

During 1986 a number of initiatives were made. In an effort to improve management supervision and lower transport costs, the Vihiga operation was consolidated by dropping 18 control-clerk/farmer groups and by increasing the number of farmers reporting to each collection center. Various experiments were carried out in an effort to increase productivity and lower costs. Experiments were conducted with a climbing variety of French beans whose yield (but also production cost) per area was expected to be considerably higher. Experiments were also conducted using compost (made up of rejected French beans and sawdust) instead of urea in an attempt to save the farmer the cost of the latter.

The factory began a more systematic analysis of bean deliveries in an effort to even out the peaks and troughs of raw material supplies and to carefully monitor the quality of beans on a sub-area basis. While control clerk remuneration was based in part on the quantity of beans that their farmers delivered, a refinement of the incentive system to link pay with various quality characteristics was beginning to be developed.

Probably the most important initiative of 1986 was the start-up (and then termination) of a new Hortiequip operation in Kisii, contracting 3466 farmers at 18 collection centers. Since 1982, Kisii had been viewed as a potentially suitable locale for the project; its ecology and high population density were seen as suitable. It was felt, however, that area diversification could not take place until the company had confidence in its organizational system and technical package. Another reason for moving into Kisii in 1986 was to reduce political activism in Vihiga by sending the people there a message that they are not the only people who can grow French beans. A third reason for area diversification had to do with staff considerations. The production manager at Vihiga had been working in that position since 1982 and decided that without a new challenge she would

probably quit. She was made general manager of the new Kisii scheme.

Along with a few senior staff members, a group of the local staff members of the Vihiga operation were brought to Kisii to train local people and to serve as supervisors. Farmers in the Kisii area generally have 2-3 acres of land and more significant cash-crop earnings than Vihiga farmers. Tea is widely adopted here, and there are 5 local tea factories. Banana production for sale is widespread. Many local farmers decided to try French beans, however, because of the shorter production cycle and to spread overall risk.

Engendering farmer interest had not been the most important problem of the new project in Kisii. The Kisii Hortiequip management reported that the main problems stemmed from staff dishonesty and the uncertainty of local political support. During the first season the company received a large number of fake receipts from its collection-center staff. Even where the cases of fraud could be proved, local pressure on the political authorities prevented sanctions being applied against the offender. As a response to this situation, the company adopted a new system whereby receipt books would no longer be held at the collection centers. Instead, collection center staff merely recorded the names and weight deliveries of farmers each day and submitted summary papers to the local Hortiequip office. At the office the beans were weighed and receipts were written out. When a farmer had made 10 deliveries he would receive that number of receipts from the office. In this way the company was responsible for payment only for the quantity of beans actually delivered to its office.(37)

The Kisii project seemed to be encountering more problems of a political nature than were faced in the establishment of the Vihiga operation. In late August a speech was made by a leading government official claiming that a "businessman ... has introduced a new crop to Kisii farmers and is failing to pay for the product delivered to him...Nobody should be left to feed on others' sweat without working for it." The official's description of the offending "businessman's" operation suggested that he was referring to the Hortiequip project. Neither the owner of Njoro Cannery nor the Hortiequip staff were contacted, however, and when an inquiry was made, it was neither confirmed nor disclaimed that the official's comments were directed at the French-beans project.

During the 1986 2nd season conflicts between Hortiequip management, staff, and local politicians increased. At one point the staff actually went on strike to protest against their treatment by management. Complaints were being made against Hortiequip by both the Kisii District Commissioner and individual chiefs. An investigation by the Njoro Cannery's project manager

revealed that the Hortiequip management in Kisii had been acting in a dictatorial fashion, delegating little authority to staff, limiting information flows to downward orders and upward reports, and generally rejecting a priori potentially legitimate complaints by staff and farmers. The tension that was building up between the company and the local people was making productive results impossible. The Kisii project was closed at the end of 1986, although local officials, staff, and farmers were told that it was possible that Hortiequip would return to the area at some future date under different management.

The Uncertain Future

As Njoro Cannery looks to the future, it appears that effective continued operations will depend on the sustained involvement of a few individual senior staff members who have nurtured the project from the beginning. Several of these people are expatriates. Efforts to train local staff for senior management positions in the factory have thus far not been successful. It also appears that the project will remain politically vulnerable. The project's growth has led it to become an important force in the regional economy where it operates. Such an important presence has made the company vulnerable to individuals seeking political gains either by drawing on company resources or by criticizing the company. The company has periodically been labeled an "exploiting middleman." It operates within a larger political environment where farmers are always "right" and companies (particularly foreign and Kenyan Asian owned) are always "wrong" when any dispute arises.

The relative success of Njoro Cannery has led many Kenyan entrepreneurs to consider establishing competing French-bean canneries. Projects have been proposed for Kakamega and for sites in Rift Valley and Central Provinces. In one case a major Belgian canning firm was considering a joint venture. Whether any significant investment will be made is not certain. The country's existing processing plants generally operate at well under capacity. Improved coordination between producers and processors is needed. Additional processing capacity is probably not required.

Even if technical, organizational, competitive, and political problems can be solved, the long-term prospect for the project hangs in the uncertain shadow of particular technical developments in Europe that could virtually negate Kenya's present comparative advantage. There is some danger that Njoro Cannery will lose its cost advantage for supplying French beans to the French market. Several European seed breeders have developed a hybrid variety of green bean containing many of the quality features of the French bean but the one-flush yield feature of the bobby bean. Having one flush permits mechanical harvesting. While this mixed variety has a slightly different

taste from the pure French bean and while mechanical harvesting does lead to more damage and the presence of foreign matter, the new variety can generate a canned product at 15-20 percent below the cost of the Kenyan product. This lower-cost mixed-variety product could well draw away a considerable part of the luxury extra-fine market demand. The latter would remain, but as a more narrow market segment.

The time frame for such developments is uncertain. There is presently inadequate quantities of the hybrid seed to meet existing demand. Commercial production using the new variety was unsuccessful in 1986, largely as a result of a drought in the south of France. Njoro Cannery may be "safe" until perhaps 1990. Saupiquet and Njoro Cannery management have decided to reduce the risk associated with these technical developments. Njoro Cannery product line will be expanded, and Vihiga farmers will be contracted in 1987 to grow both French beans and gherkins.

Concluding Remarks

This case study of Njoro Cannery/Hortiequip highlights the following points about contract farming and research on this form of organizational arrangement:

- 1) The contracting company must seek to develop an organizational framework that improves farmer productivity and then strive to progressively reduce the transaction costs arising from this arrangement.

- 2) A system of smallholder contracting will generally involve high transaction costs and "leakages" (whether of money, inputs, or product), but the basic economics of crop production may limit the company to this high cost option.

- 3) In smallholder contracting systems the effectiveness of extension staff is of critical importance. Analysis must go beyond company-farmer relations and examine company-staff and staff-farmer relations.

- 4) Contract farming systems go through potentially significant structural and/or policy transformations in response to or in anticipation of internal project developments or external events. Examining the rationale and impact of these adjustments is crucial in understanding the "life cycle" of a contract farming project.

- 5) Under circumstances where contracts with neither farmers nor staff are truly enforceable, the contracting company must develop the capacity to "migrate" locationally.

6) Even where a company adopts an apolitical line, political considerations necessarily intervene in smallholder projects. Local political support proves essential for success, yet company success tends to breed political opportunism.

Notes

- 1 Based on interview with Gilbert Bintein, General of Njoro Cannery on September 11 and 12, 1986.
- 2 Marketing in Europe, October 1986. Special article on the vegetable canning industry in France.
- 3 Bintein.
- 4 Marketing in Europe, p. 58.
- 5 Ibid., op. cit.; Bintein.
- 6 Saupiquet Annual Report 1985; Marketing in Europe, p. 60.
- 7 Calculated from confidential Njoro Cannery data.
- 8 Based on information provided by Bintein.
- 9 Ibid.
- 10 Interview with Mr. Wadhwa of Corner Shop Ltd. on September 10, 1986.
- 11 Ibid.
- 12 This and the subsequent two paragraphs are based on the interview with Mr. Wadhwa and interviews with former staff of the Corner Shop and farmers in the Chango area of Vihiga who participated in this scheme. Our rather negative findings contradict the fairly rosy picture of the project presented in a 1982 FAO document entitled "The Private Marketing Entrepreneur."
- 13 Bintein interview.
- 14 The social problems of a large female labor force were emphasized by several Lake Naivasha farmers during interviews held September 13-15, 1986.
- 15 Bintein interview. Mr. Wadhwa was later dropped from the project as he was unable to finance the Hortiequip operation.
- 16 Kakamega District Development Plan 1984-1988.
- 17 Agriculture Development Plan for Vihiga 1968-1972.
- 18 Ministry of Agriculture, "The Marketing of Fruit and Vegetables in Vihiga" 1969, p. 3.
- 19 Kakamega District Development plan, p. 5.

20 Development Alternatives Inc. (DAI) "A Strategy for the Development of Four Districts in Western Kenya" 1982.

21 Quoted in Martin.

22 Martin, p. 164.

23 Ibid., p. 167.; Also based on our survey in Vihiga, September 1986.

24 As reported by senior staff of Hortiequip (Vihiga) during interviews of September 17 and 18, 1986.

25 Based on survey of Vihiga farmers.

26 DAI, p. 41; Kakamega District Development Plan.

27 Martin, p. 165.

28 MOA, Marketing of Fruit and Vegetables in Vihiga, p. 3.

29 Interview with production manager of Msambuani Industries on Sept. 23, 1985.

30 One factor explaining the relative productivity of farmers in the project is certainly control of clerk effectiveness. This can be illustrated by examining results from two of the sub-areas where we interviewed farmers--Chango and Mbale. Each of these sub-areas has a collection center with more than one control clerk operating out of each. During 1985 Chango actually had four control clerks (each with more than 125 farmers) while Mbale had three control clerks (each with more than 200 farmers). The characteristics of the farmers attached to individual control clerks at these stations are basically the same. Control clerks aren't allocated a particular territory, so geography isn't a factor. All farmers at one center plant and harvest at similar times. Experience in the project should not differ according to which control clerk a farmer is attached to. Thus differences in average yields between farmers at the same locale but with different control clerks can be largely explained by the relative effectiveness of control clerks.

We lack individual farmer data and have only the mean yields for each collection center. While the data shown below do show variations in performance according to control clerk at the same centers, in the absence of calculations of standard deviations we cannot claim statistical significance.

1985 Yield Variations at Individual Collection Centers

Area/Code	Combined Seasonal Yields	Index
Chango A	188.9 kgs	100
B	188.5	99.8
C	175.3	92.8
D	161.8	85.6
Mbale A	181.9	100
B	158.2	86.9
C	151.7	82.9

While in Chango the aggregate performance difference between the best and the worst control-clerk group was over 14 percent, in Mbale it was over 17 percent.

31 Farmers interviewed in our survey complained of this problem.

32 Staff of Hortiequip (Vihiga).

33 Ibid. In only one of the 18 sub-areas where the project operated did average farmer yields approach those obtained elsewhere in Kenya for French beans. This was the Mbale area, which had an average yield of 76.6 kgs per 1 kg of seed, but this relatively good annual average stems largely from the excellent results of a late year experiment whereby farmers were provided with only 1/2 kilo of seed for a planting. These farmers obtained an average of 80 kgs of beans or 160 kgs per 1 kilo of seed. Prior to this experiment results in Mbale had not been good. Over the entire year Mbale farmers were provided with inputs valued at Ksh 8755 and the area's input balance for the year was Ksh 4177 or 47.7 percent.

34 Hortiequip staff.

35 The project proposal predicted average yields of 100 kgs per kilo of seed. None of the centers reached this average during the season.

36 Calculated from Hortiequip and Njoro Cannery Records.

37 Interviews with Hortiequip (Kisii) staff, September 21-22, 1986.

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PART II

**THE DEVELOPMENT OF THE KENYA/UNITED KINGDOM TRADE IN "ASIAN
VEGETABLES" WITH PARTICULAR REFERENCE TO THE PROBLEM OF
COORDINATING PRODUCTION AND EXPORT MARKETING IN KENYA**

Since the late 1950s, Kenyan farmers and exporters have airfreighted fresh fruits and vegetables to Western Europe and the Middle East. Kenya's horticultural exports have included several dozen tropical and temperate fruits and vegetables and at any one time over forty different items may be exported. While becoming increasingly important to the Kenyan economy, the value and volume of Kenya's fruit and vegetable exports has remained relatively small compared to the supplies provided to the EEC by nonmember Mediterranean countries such as Morocco and Israel. Nevertheless, Kenya has held a predominant position for nearly twenty years in one segment of the European market. This is the market for "Asian vegetables," the group of vegetables that form an important part of the traditional diet of several South Asian communities and that are still widely consumed by various South Asian and other immigrant communities in Western Europe, particularly in the United Kingdom.

Kenya exports up to twenty different Asian vegetables. These vegetables fall under various classifications. Some are beans (i.e., valere, gwar, and chola), while others are peas (tuwer and papdi), capsicums (various types of chillies), marrows/gourds (dudhi, gisoda, turia, tindori, and mooli), leaves (chillie leaves and patra), fruits (aubergine and gunda), cucurbits (karela and tindola), or fit into additional categories (i.e., okra, tindo, saragwa, and gingra). Asian vegetables such as chillies and okra have recently become popular among sections of the indigenous West European consumer population, while other Asian vegetables are consumed almost exclusively by immigrant (or second generation) communities. Very few of the Asian vegetables have an "identity" of their own. Instead, they are typically consumed and nearly always distributed in combination with one another. For marketing purposes these vegetables comprise a comprehensive basket.

This study examines the Kenya/U.K. trade in Asian vegetables beginning at the consumption stage in the U.K. and tracing back the marketing chain to smallholder production in Kenya. For the U.K. I examine the source and growth of demand for Asian vegetables and the structure and characteristics of the Asian vegetable marketing system at retail, wholesale, and import levels. For the Kenyan dimension of the trade I begin by examining the structure of the export trade and the political environment in which it operates. I go on to discuss various contributions of the Asian-vegetable trade to the Kenyan economy.

Special attention is then given to the problem of coordinating production and export marketing in Kenya. I examine the inefficiency and instability of the ties between farmers and

exporters, which are now beginning to undermine Kenya's competitive position in the U.K. market. This unstable production and marketing system serves as the backdrop to one company's attempt in the early 1980s to introduce an Asian-vegetable procurement system based on contract farming. I examine the circumstances surrounding this contract farming project, its performance, and its impact.

The Origin of the Trade

The historical origin of Asian-vegetable production in Kenya is unclear but probably dates to the late 1860s or 1870s with the demand and seed coming from Indian merchants based in Zanzibar and along the Kenyan coast. The demand for these vegetables increased significantly by the turn of the century when thousands of people from the Indian subcontinent were brought as indentured labor into the area to work on the Uganda Railroad. Those workers not stricken by smallpox or malaria and not mauled by lions needed to eat. By 1898 the rail line had reached a place called Makindu (210 miles west of Mombassa), where a camping station for the workers was established. By this time 13,000 Asians were working on the rail line, requiring 21 tons of food per day. A major drought necessitated that practically all food rations be brought up from the coast. It is likely that the presence of these workers not only stimulated Asian-vegetable production at the coast but also encouraged some farmers along the Makindu River to grow these vegetables. The total number of Indians brought over to work on the railroad was 32,000. (1)

Only about one-quarter of the railway workers remained in East Africa, but the local Asian population was augmented by other immigrants from India. Most immigrants were from Gujarat with smaller numbers coming from the Punjab. Many of the immigrants were petty traders or children of peasants who were released from the land. Many immigrants set up small "dukawallahs" in the cities along the railway line selling basic goods to Africans, Asians, and Europeans. (2)

With the expanding local Asian population, the market for Asian vegetables was enlarged. Much of the production of these vegetables was by Asian farmers in areas such as Kibwezi and Athi River, who sent the produce by rail or truck to Nairobi and Mombassa. By the 1950s, African farmers at Voi and the coast also supplied the Mombassa market. Asian retailers would then sell the produce to consumers. The local Asian-vegetable marketing system predated the export trade by some forty years.

In the late 1950s and early 1960s there was a considerable increase in migration of young Indian men to the U.K. A small international trade in certain traditional Indian vegetables was initiated at this time. Vegetable traders in India sent small consignments of produce to small-scale Indian companies in the U.K., who then sold to the immigrant community in London. Demand continued to outpace supply. The U.K. Asian population expanded rapidly in the 1960s as the initial male migrants were joined by their families. Supply was constrained by insufficient air cargo capacity between India and the U.K. (3)

During the 1960s Kenya emerged as an important source of supply for the immigrant market. Actual Kenyan exports of chillies and other Asian vegetables began in the late 1950s, but this was only of tiny quantities. During the mid-1960s a few Kenyan Asian-owned companies entered the export trade and expanded Kenya's supplies of Asian vegetables. By 1969 this export trade had reached over 750 tons/year.

The Kenya/U.K. trade in Asian vegetables has expanded more than ten-fold over the past decade and a half, and this basket of commodities has played an important role in the overall development of Kenya's horticultural export trade. Over the past fifteen years this group of vegetables has comprised over 30 percent of the volume of Kenya's fruit and vegetable exports. For Kenya's most important market, the United Kingdom, Asian vegetables have comprised over 60 percent of the volume of bilateral fruit and vegetable trade during the 1980s. Several Kenyan firms that initially built their operations upon the Asian-vegetable trade have since been able to diversify into other products.

The Market for Asian Vegetables

The demand for Asian vegetables in Western Europe is heavily concentrated in those cities that have sizeable communities of South Asian ethnic origin. Given the strong historical ties between the U.K. and the Indian subcontinent, the vast majority of South Asian immigrants to Europe have settled in the U.K. Smaller South Asian communities also exist in Amsterdam, Berlin, and in each of the national capitals of Scandinavia. As nearly 95 percent of Kenya's Asian-vegetable exports have gone to the U.K., we focus our discussion on that market.

The Asian Population in the U.K.

According to estimates made by the Office of Population Censuses and Surveys (OPCS), there were over one million

residents in the U.K. in 1980 whose ethnic origin was in the South Asian subcontinent. No British census has raised questions on ethnicity, so estimates of the size and demographic structure of the various ethnic groups in the U.K. population are based on information about birthplace and parental birthplace taken in the 1971 census, up-dated and supplemented by estimates of births and deaths, migration statistics, and information about ethnicity raised in the 1979 and 1981 Labor Force Surveys.(4) The OPCS provides the following estimates of the size and growth of the local South Asian population during the 1970s:

Population of Asian Communities in the United Kingdom
(Thousands of People)

Group	Mid-1971	Mid-1976	Mid-1980
Indian born	307	390	460
E.African Asian	68	160	
Pakistani/Bangladeshi	171	246	355
Total "Asian" Population	546	796	1007

(Source: OPCS Monitor PPl 81/6)

As can be seen, the local South Asian population nearly doubled during the 1970s. Since data sets are not consistent it is not possible precisely to subdivide this growth according to net migration and net natural increase. Using data provided in the issues of International Migration published by OPSC, however, it is estimated that slightly less than half of this population growth over this period was due to migration. Migration did play a considerably more important role during the 1971-76 period than in the latter half of the decade. This was particularly the case for Asians who emigrated from East Africa.

Even with a decline in immigration levels, the population of South Asian communities should continue to grow rapidly due to their relatively high birthrates. While their numbers constitute about 2 percent of the total U.K. population, over the 1977-83 period they comprised, on average, 4.5 percent of all live births in the country.(5) Based upon prevailing population growth rates, one Government report has estimated that the 1991 population of people of wholly Asian ethnic origin will be between 1.25 and 1.50 million.(6)

The high birth rate of the Asian population combined with the tendency for immigrants to have been concentrated among the young has led to an age structure for the local Asian population that is skewed toward younger ages. While 6.3 percent of the overall U.K. population is between the ages of 0 and 4, a survey among the Pakistani population in a section of Manchester found 20 percent of the population to be in this age category. While 31.2 percent of the U.K. population is 45 years or older, the sample of the Pakistani community found only 6.8 percent of the group in this age category.(7)

The Asian "community" in the U.K. is actually a "proliferation of distinct ethnic groups" with different countries/regions of origin, different languages, and different religions. At least three major religions, four major languages, and four countries of origin can claim large groups among the U.K. Asian population. The various groups differ in their rural vs. urban origins, their settlement patterns in the U.K., their occupational structures, and their dietary patterns.(8)

Dietary Habits

While the tastes of the younger generation are certainly changing, a high proportion of immigrants of South Asian origin continue to eat traditional foods rather than English foods. This is partly out of sheer preference for certain foods and partly to maintain their religious affiliations and social customs.(9) A 1973 survey found that 79 percent of respondents born in India or Pakistan ate only traditional foods at their evening meals. The survey suggested that this eating pattern would continue into the second generation. It found that most Asian children were eating primarily traditional dishes with only a small percentage preferring English food.(10) Demand remains strong for certain traditional spices and vegetables and for a growing array of Indian convenience foods that a few specialist firms have supplied. A recent study estimates that the 1985 U.K. market for Indian ingredients and processed foods was 40 million pounds.(11)

Some vegetables are regarded as staple items in the South Asian diet, while other vegetables are either delicacies or spices/flavorings for which there are dried alternatives. The staple vegetables include: carrots, okra, spinach, chillies, peas, and potatoes. Other commonly eaten vegetables include aubergines, karela, tomato, dudhi, and cabbage. Thus, one finds some overlap between the traditional vegetable basket consumed by the Asian population and that of the larger English population. For some Asian vegetables there are locally grown substitutes. For example, dudhi can be replaced by marrows and courgettes

while mooli can be replaced by radish or cabbage. There are no acceptable substitutes for chillies, okra, or karela.

Vegetable consumption patterns differ for the different subgroups. Gujarati Hindus are primarily vegetarians and thus require greater quantity and more variety of vegetables. They would be the prime consumers of items such as dudhi, gwar, gisoda, papri, patra, tindola, and valore. Even when multiple groups consume certain items their particular tastes may vary. For instance Gujaratis use chillies as a pickle and thus want a mild variety that has a nice dark green color. Punjabi Muslims use chillies as a spice and thus require a pungent light green variety. There are two main types of karela that are preferred by different groups. Together with their different settlement patterns (see below), these taste differences of the various South Asian groups create a segmented market requiring a specialist knowledge for effective distribution.

Concentrated Settlement Pattern

The local population of South Asian origin is concentrated in a few major English cities. Early South Asian migrants settled in areas experiencing labor shortages either due to their rapid rate of economic growth (i.e., Greater London) or due to poor working conditions (i.e., in the Manchester or Leeds textile industries).⁽¹²⁾ South Asian communities are concentrated in London, Birmingham, Bradford, Leicester, or Manchester. For example, according to 1981 census data showing the regional distribution of the local population according to country of birth, of those born in India, Bangladesh, or Sri Lanka, over 53 percent reside in the Southeast, with over 38 percent living in London alone. Different subgroups have had different settlement patterns; for example, Pakistani Muslims are most heavily concentrated in Birmingham, Liverpool, and Manchester, while Gujaratis from East Africa are most heavily settled in Leicester and parts of London.

In some cities the Asian population has come to form a significant proportion of the overall population. For example, between 1971 and 1980, the Asian population of Bradford rose 89 percent to reach an estimated 47,000. Its share of the city's population rose from 8.4 percent to 17 percent.⁽¹³⁾ For Leicester, the 1981 census found that 19 percent of the local population was born outside the U.K., of whom 80 percent were born in India or East Africa.

The Asian-Vegetable Marketing System

General Features

Before examining the various levels in the Asian-vegetable distribution chain it is appropriate to lay out some general distinguishing features of this trading network. Such features include the following: (14)

1. Dominance of minority-owned firms---

English fruit and vegetable importers and wholesalers have played only a minor role in the servicing of requirements for the country's ethnic minorities. Only recently have these firms entered into the field of "exotics" primarily at the behest of overseas marketing agencies. Conservatism, lack of understanding of a potential opportunity, as well as the preference for dealing on a commission basis limited the participation of English firms in the ethnic foods trade. The particular requirements of the country's Asian and West Indian population have been met largely by small-scale family companies with origins in these areas.

2. Fixed price system---

Unlike the general fruit and vegetable trade that until recently has operated primarily on a commission/consignment basis, the Asian-vegetable trade has always operated with fixed buying and selling prices. While import costs vary from item to item, importers and wholesalers have tended to sell the wide range of Asian vegetables at the same price level. This has served to economize on transaction costs as price information could be consolidated in one figure and the administration of sales made easier. Traders look for an overall margin on their basket of produce, and some items subsidize others. Prices may remain steady for a considerable period. The most significant influence on prices has come from factors out of the control of participants--i.e., air freight rates and currency movements.

3. Quantity rather than price adjustment---

For Asian vegetables sent from Kenya freight, costs are higher than f.o.b. prices and, for a low value item such as aubergine, may be twice as high as the f.o.b. cost. Freight costs account for nearly a third of the retail prices of these vegetables. This, together with a system of minimum export

prices set by the Kenyan Government, determines that the trade has minimal latitude for price reductions in the face of surpluses. The limited spending power of most Asian communities and the personal relationships between retailers and consumers limits the scope for price increases in the face of shortages. Demand patterns are consistent and relatively price inelastic. The trade thus utilizes quantity adjustments rather than price adjustments to match supply with demand. Given the relatively small size of the trade, but the vast range of items exchanged, shortages and surpluses of individual items are ever-present.

4. Fragmentation rather than concentration---

Unlike the general fruit and vegetable trade, which is experiencing increased concentration at import, wholesale, and retail levels and greater degrees of vertical integration across stages, the Asian-vegetable (or ethnic) trade has experienced greater fragmentation, particularly at import and retail levels. At the import level a group of medium-scale, well-established firms have faced increased competition from a large fringe of small-scale firms making deliveries direct from the airport to retail shops. The Asian retail sector continues to proliferate, reducing the clientele for each individual shop.

Retail Distribution

The retail sale of Asian vegetables is predominantly from the corner shop located in an inner-city area. Some shops carry a wide range of spices and other foods and a more limited stock of vegetables, while other shops are fresh produce specialists and carry a bewildering array of fruit and vegetables, many of which are unknown to the average Briton. Many cater to a primarily ethnic-minority clientele. One survey of Asian shopkeepers in three British cities found that, on average, only 30 percent of their customers were white. (15)

Asian retail establishments are a relatively recent phenomenon in the U.K. Few Asian-owned shops existed prior to the 1950s, and it was not until the early 1960s that there was major growth in this type of investment within the Asian communities. Desai (1963) reports that the first Gujarati grocer in Birmingham started business in 1949 and that by 1961 there were still only six Gujarati grocers. The growth of Asian retailing was rapid in the 1960s and on into the 1970s with individuals responding directly to the opportunities created by the growth in the local Asian population to supply food, clothing, and other items unknown to English shopkeepers.

The growth of the Asian retail sector occurred simultaneously with a pattern of economic decay in some inner city areas and with a trend toward increased concentration of retail food sales. Some researchers have accounted for this in terms of a comparative advantage of "ethnic entrepreneurs" in servicing the needs of particular communities. The retailer, dealing in a range of cultural items, goods, and services, can develop a certain niche that shields him from outside competition. (16)

Against this optimistic picture are a number of studies that have argued that the majority of Asian retailers are working extremely long hours and generating relatively low returns. Not only is the level of purchasing power within Asian communities relatively low, but the expansion in the number of retail outlets has spread the Asian consumer pound more thinly. There are now too many businesses chasing the ethnic trade with insufficient wealth in the communities to support the quantity of retailers. Their location in areas of high Asian population density limits their access to the majority population. (17)

Indeed, for the past several years retailers have seen their margins on Asian vegetables squeezed as costs of supplies have risen with increased air freight costs, but heavy competition has prevented them from passing on these cost increases to consumers. Some retailers have encouraged local Asians to grow vegetables in their backyards so as to provide them with a cheaper product and thus some competitive edge. (18)

Many Asian greengrocers have on-going orders from a wholesaler who makes deliveries to the shop several times per week. Generally, preference is given to suppliers who can provide a full product range plus multiple-week credit. During periods of peak demand or short supplies this retailer may seek additional supplies from wholesale market-based traders or small-scale distributors with lower prices, but limited credit arrangements.

During the 1980s the multiple chain supermarkets have shown some interest in items such as okra and chillies to be included in their overall range of "exotic" fruit and vegetables. The volume of this flow is growing, but remains small.

The Wholesale Trade

Most of the wholesalers of Asian vegetables carry a full line of fruit, vegetables, and spices for a largely ethnic minority clientele. Based on interviews conducted during the

1984/85 winter, I have estimated that twelve firms, based in Birmingham, London, or Bradford, account for three-fourths of primary or secondary wholesale turnover for Asian vegetables. Secondary wholesalers in cities such as Liverpool, Manchester, Coventry, Leeds, and Glasgow will normally obtain their supplies from Birmingham- or Bradford-based importer/wholesalers.

The history of many of these wholesaling firms has followed a similar path. Most started their businesses in the late 1960s or early 1970s importing small quantities of vegetables and spices from contacts they had in India, Pakistan, Kenya, or Cyprus. Initially, they used their own houses for storage and made deliveries door-to-door to shopkeepers. The firms then acquired warehouses and began selling near or in primary wholesale markets. Contacts and business outside one's own community and ethnic group were expanded as were the product ranges of these firms. Even with the expanded clientele and product range, Asian vegetables from Kenya have remained a key component of each firm's business, and the Asian retailer and consumer the prime orientation. Due to the risks of importing produce directly (see below), most of these firms have withdrawn from this activity and now rely on a few importers for their supplies.

Importing Asian Vegetables

The Asian-vegetable import trade began in the 1960s when some Indian merchants began receiving produce from India and then selling it from the parking lot of Heathrow Airport. The distribution of Kenya's Asian-vegetable supplies also focused around the "parking lot merchants" until the early 1970s. At that time several small companies began operating vegetable-delivery services from vans. Distribution was still largely concentrated in the London area, although significant Asian communities were developing in the cities of the Midlands. Eventually, several "van importers" established warehouses in the vicinity of primary wholesale markets, reduced the extent of their retail shop deliveries, and operated centralized distribution systems. In 1973 a senior partner in Kenya's largest export company emigrated to the U.K. and established an import/distributing company. Until the late 1970s this firm would dominate the Asian-vegetable trade in the U.K. setting the standards for quality, setting price guidelines, and widening the distribution network supplying the ethnic minority population.

In the 1980s the import trade for Asian vegetables has featured a few long-established dominant firms and a large competitive fringe of small-scale or specialist firms. Five firms probably account for 65-75 percent of the U.K. imports of

Asian vegetables from Kenya, although no single firm has more than a 20 percent share of the market. For some of the cities in the Midlands, one or a few firms provide the bulk of imported Asian vegetables. These and other firms also obtain Asian vegetables and other "exotic" fruits, vegetables, and spices from India, Pakistan, Cyprus, Zambia, Egypt, and South and Central America. With one exception, each of the leading firms specializes in the importation of tropical fruits and vegetables for distribution through "ethnic channels." Again with one exception, each firm concentrates its activities in a single city or small region. Each firm is Asian-owned and is typically a family enterprise or two-family partnership. Most of these companies have an annual turnover of less than 5 million pounds. These firms are based in either London, Birmingham, or Bradford. Each firm carries up to thirty individual products and deals with perhaps 100-150 secondary wholesalers and retailers. (19)

In addition to these five firms there are a number of smaller importers of Kenyan produce. Some of these firms are primarily wholesaling operations that merely obtain part of their requirements directly from overseas. Others are the modern-day "van importers," who pick up small consignments of produce at Heathrow Airport and make deliveries by van direct to retailers in London and other cities. There may be up to fifty "van importers" operating in the country. These companies generally do not maintain stocks of produce, preferring immediate turnover. Some of these firms are permanently in the trade while others are simply "cowboy outfits" operating part-time or seasonally and commonly stopping and starting up under a range of different names.

The "van importers" have proven to be particularly important in serving the London market. During the winter months they may have a combined 30 percent share of this market. With insignificant overheads and by bypassing the wholesale trade, the van importers have been able not only to undercut in price some of the larger importers, but also to provide the service of delivery to retailers, but the "van importers" are not in a position to offer the extended credit terms that larger importer/wholesalers may offer. The competitive fringe provided by the "van importers" has reduced the market power of the larger firms. It has also undermined previously stable trading relationships between established importers and their customers, however. Some of these importers have found it to be unprofitable to continue in the Asian-vegetable trade and have diversified their product range into more profitable items.

As is the case for a few of the leading firms, many "van importers" are linked to family or friends in Kenya. While the larger exporters tend to deal with the larger, well established

import/wholesaling firms, many of the small-scale, part-time exporters have traded with the small importers willing to handle a consignment of a ton or less. As the small-scale firms on each side of the trade operate with limited overhead costs, they have been able to undercut the more established firms. While on the surface this appears to be a sign of "healthy" competition and the reduction of "inefficient" market power, examined more closely this pattern appears to be reducing the incentives to participate in the trade for those who are most able more fully to develop the market.

Importer Dissatisfaction

U.K. Asian-vegetable importers have relied heavily on supplies from Kenya. Some produce is procured from European or other countries, but their production is either highly seasonal (i.e., Cypriot okra), relatively more expensive (i.e., Dutch aubergine; Indian, Mexican, and Brazilian okra), or not of the varieties preferred by the local Asian consumers (i.e., Indian, Pakistani, and Cypriot chillies). Given their highly specialized product range, these importers are vulnerable to supply disturbances on the Kenya side.

Importers generally have informal, "gentlemen's" agreements with one or two Kenyan exporters to send a specified quantity of each of 20-30 items, a specified number of times per week. These will be on-going orders that might be subject to adjustment on a weekly or bi-weekly basis via telex communication. The payment schedule for importers is related to their size of purchase, although two weeks credit is the norm. Small importers may have to prepay for their orders a week or consignment in advance. Where transactions are between family companies, the importer may have payment periods of up to three months. While some importers have dealt with the same exporters for a number of years, most importers report that they have shifted among several suppliers in the past few years.

Most U.K. importers are dissatisfied with the ability of their Kenyan suppliers to meet their requirements for quantity, quality, and continuity of supplies. Many firms view Kenya as the least reliable of the main source countries supplying the overall U.K. fruit and vegetable market. Some firms see this problem stemming primarily from the bottleneck in international transport in Kenya during the peak winter supply months. In recent years during the peak export months of December and January, there has been inadequate air-cargo space for fresh produce leaving Nairobi, particularly that bound for the U.K. market. Significant quantities of produce have been wasted, gone unharvested, or off-loaded from airplanes (see below).

Other importers see their difficulties stemming from the practices of exporters. They feel that certain exporters have inadequate commitment to their customers and will chase short-term profit-generating opportunities even at the expense of "loyal" customers. In a large number of trading relationships there exists a strong element of distrust. There are certainly exceptions to this state of affairs, but most importers feel that many exporters simply cannot be relied upon. The poor services provided by some exporters has tended to generate external "diseconomies" for the overall reputation of Kenya as a supply source and has undermined the position of the more competent firms.

Importers generally face produce quantity and quality risks rather than price risks. Within an overall climate of distrust importers perceive that the general rules governing the trade include the following:

1. At particular times importers will not receive any produce at all from particular suppliers because (a) of a failure on the part of the exporter to secure sufficient airfreight space, and produce that is sent will go to preferred customers; (b) cargo is off-loaded at the airport in the last minute scramble for cargo space; and/or (c) the exporter has located another buyer who is offering better terms and has thus redirected the consignment. Under this condition importers will need to make purchases from other importers to satisfy at least their most important customers.

2. Importers may not receive produce of marketable quality because (a) the consignment has been transshipped and subsequently delayed; (b) produce has dehydrated due to heat build-up within the carton during hot periods; and/or (c) the supplier has failed to grade and pack the produce properly. There is no standardized Kenyan product; quality levels differ by grower and exporter and quality varies week by week. Under this condition importers can make claims against the exporter for the produce that is unmarketable, and obtain a certificate from the local inspection services to that effect. Most importers must be careful about making "excessive" claims against exporters, however, or the next consignment may "fail" to arrive at all. If quality deterioration was due to transshipment, the importer still must prove that the relevant airline was at fault.

3. Importers will not generally receive what they have ordered because (a) within Kenya some items may be in short

supply while others have been harvested in surplus. The exporter will seek to meet the quantity of the order by including larger quantities of the surplus item within a consignment; and (b) even when communication is made to the exporter that particular items are short or flooded, a lag time of a few days normally follows before a noticeable response is made. Importers are particularly worried about shortages, as these result in dissatisfied customers. Some firms report over-ordering those items that are "traditionally" under-consigned. Normally surplus produce can be sold at cost.

Importers have no legal or other institutional remedy against a supplier who willfully breaches an agreement. One sanction, important in many trading relationships, is the threat of lost future trade. This threat is powerful only for the handful of larger importers. Another possible sanction is the threat of "advertising" the wrongdoing, thereby undermining the reputation of the exporter. This sanction seems to have only limited value as most firms are painfully aware that many trading relations may go sour for a variety of reasons and that the breach of one agreement should not greatly damage the reputation of a firm. Only repeated breaches of agreements should lead to a firm getting a "bad name." Furthermore, some exporters have a very short time horizon with their prime interest being the generation of rapid seasonal profits and perhaps the export of capital to overseas bank accounts.

Importers generally can spread these quantity and quality risks by procuring produce from more than one Kenyan supplier as well as from one or more suppliers in another country. Some importers and wholesalers have encouraged British farmers to grow chillies during the summer months. Still others have invested their own resources in production schemes in such countries as Mauritius and Egypt and even in the black "homelands" in South Africa. Importers do not expect that alternative supply sources will initially be able to match the quality of Kenyan produce. Nor do they expect these sources to compete well initially with the Kenyan supplies on the basis of price. Increased reliability and continuity is the central objective in diversifying away from Kenyan supplies.

The Asian-Vegetable System in Kenya

The Export Trade

Kenyan exports of fresh fruit and vegetables were introduced during World War II with supplies going to Allied troops stationed in East Africa and the Middle East. The export trade to Western Europe began in the mid-1950s with the expansion of

commercial air transport. The European trade was initiated by the European-managed Horticultural Cooperative Union, which sent supplies on consignment to firms operating out of London's Covent Garden market. In the mid-1960s a few Kenyan Asian-owned firms began exporting Asian vegetables and other items to the U.K. These firms either had been local fruit and vegetable wholesalers or had sizeable vegetable farms. The fruit and vegetable export trade can be characterized by four major features: (1) the dominant role of the private sector; (2) the limited role in export marketing of African-owned and managed firms; (3) its fragmented structure; and (4) a major international transport constraint. We touch briefly on each of these characteristics.(20)

(1) Private Sector Dominance

For nearly all agricultural crops and products marketed domestically in Kenya or exported, the Kenyan Government has played a substantial role either through price or territorial controls or through direct involvement in physical marketing activities. In contrast, the role of the Government in the development of the fruit and vegetable export trade has been very limited. In 1967 the Horticultural Crops Development Authority (HCDA) was created. Linked to the Ministry of Agriculture, it is a specialized parastatal empowered to regulate, control, or involve itself directly in virtually all aspects of horticultural production, processing, and marketing. While given extensive legal powers, the HCDA has never received sufficient funding or manpower to carry out most planks of its broad mandate. Its prime activities have been (a) periodic support for smallholder horticultural production schemes, (b) domestic marketing of onions, (c) export licensing, and (d) monitoring and regulating the export trade.

The Authority entered marketing directly, not in pursuit of an explicit policy objective, but primarily in order to raise revenues to cover its operating costs. This occurred first in the domestic marketing of onions and later in a small-scale export operation. Still, the actual exports of the Authority represent no more than one percent of total horticultural exports.

(2) Limited Role of African-owned and Managed Firms

Since its initiation, the horticultural export trade has been dominated by firms owned and managed either by Europeans or Kenyan Asians. Kenyan Africans have had a minimal role in export marketing. The HCDA has long maintained a liberal export

licensing policy in order to encourage potential exporters, particularly African-owned firms. During the 1970s and 1980s several African firms have entered the export trade. Some of these were owned by civil servants and their wives. Most of the African-owned firms have experienced considerable difficulties and have withdrawn from the trade. These firms either had difficulty obtaining adequate air cargo space, had insufficient marketing experience and market contacts, or didn't get paid by overseas buyers. The managers of these companies tended to divide their time between this business and several other endeavors, further constraining their ability to establish a stable position in the trade.

In line with a general Government policy for the economy, there have been frequent calls for the "Kenyanization" of the trade, sometimes made from fairly high levels in Government. As all leading firms are already majority-owned by Kenyan (Asian or European) citizens, the term can only be interpreted as a call for "Africanization." The liberal licensing policy introduced in the 1970s was not succeeding in reducing the dominance of firms owned by non-Africans.

In the late 1970s, export companies were put under pressure to take on influential African personalities from public life to "participate" in their operations. Failure to do so would have resulted in the termination of one's export license. Generally, such participation did not involve capital investment. Instead, the "personalities" were paid service fees for providing some measure of protection and support in overcoming bureaucratic hurdles. Some of the "personalities" have been provided support from their companies to develop their own farms.

Nine firms continue to account for 85-90 percent of the volume of Kenya's fruit and vegetable exports. With the exception of one European-managed company, each of the other leading fruit and vegetable exporting companies is owned and managed by Kenyan Asians. Only a few of these firms have Africans in senior management positions, although their overall staffs are largely African. African-owned firms have a combined share of less than 7 percent of export volumes. Asian-owned firms conduct nearly the entire trade in Asian vegetables.

Frustration of the official policy has led to recent discussions about "transferring" the trade from established exporters to rising Kenyan African entrepreneurs. This would involve selective licensing, increased scrutiny over various practices of existing exporters, and provision of preferential treatment to a limited number of well-connected African-owned firms. (21)

In recent years there have been numerous official statements deploring the pricing policies of fruit and vegetable exporters as well as their alleged failure to repatriate the "rightful share" of foreign exchange earnings to Kenya. At times, these statements have taken on a strident line with claims made that these exporters were "plundering of the economy." These public attacks have generally questioned the integrity of the entire industry and have not made distinctions between offending and non-offending firms. At the same time some firms have been accused of "exploiting" farmers. Most export firms see their investments and future livelihood as being vulnerable to politically-inspired interventions.

A few of the export companies have family living in the U.K., which enables these firms to economize on the transaction costs of export marketing. Some exporters deal directly with affiliated family companies while others get assistance from family members through the provision of market information and perhaps through debt collection. Firms with family links are far less vulnerable to various forms of importer opportunism. Many Kenyan exporters have had consignments not paid for or had importers make large claims on the basis of poor quality or noncompliance with their orders in terms of product mix. Those Kenyan firms that deal with family members overseas have not had to "chase" their money or be subject to large claims. They have also been less exposed to exchange-rate risks than other firms. Their U.K. affiliates will generally absorb the deviations between orders and actual deliveries and swallow their normal margins whenever procurement costs have risen temporarily. During periods of financial stress the overseas affiliate can inject capital into the local operation by prepaying for orders.

(3) Fragmentation of the Trade

In the 1960s the number of firms exporting fruit and vegetables was probably less than a half dozen. Since the early 1970s the number of licensed exporters has mushroomed to over one hundred. While not all licensed exporters do engage in trade, and while only a limited number of firms contribute a large proportion of overall export volumes, it can still be argued that the Kenyan export trade is too fragmented either to maintain or to expand Kenya's trade position.

The majority of firms holding export licenses have been part-time exporters. They export only during short periods of the year and/or are involved in this trade only as a supplementary activity to selling tea, running a travel agency, or holding a civil service job. Over the years many "cowboy outfits" have sprung up in search of quick profits in this trade.

Their scale of operation warrants neither the investment in marketing infrastructure nor the investment in building up stable relationships with growers and overseas buyers. Most firms have neither the capacity nor the inclination to plow back export earnings into the horticultural sector. Most firms have insufficient turnover to obtain an economical return on precooling and cold storage facilities or on the development of their own extension staff.

The fragmentation of the trade results not only in Kenyan firms scrambling for farmer produce and air cargo space, but also competing against one another for the same markets. Fragmentation has also served to undermine the reputation of Kenya as a supplier. The quality of produce and associated services varies by exporter with small-scale, ad hoc exporters not generally being able to satisfy importer requirements. This undermines the overall image of the Kenyan trade and acts as a "drag" on the business of the more competent firms. Regular, long-term marketing relationships have been somewhat undermined by the presence of an array of firms operating with minimal overheads and able to offer produce in the short run at a discount. The fact that the HCDA tends to pass on to new exporters the names and addresses of the overseas buyers of existing exporters does not help preserve these stable trade relations.

(4) International Transport Constraint

Throughout most of the history of the horticultural export trade, firms have had to contend with limitations on international cargo facilities out of Kenya. Although it was first mooted as an idea in the early 1960s, has been discussed repeatedly since that time, and has been developed extensively by other horticultural exporting countries, international sea transport of Kenyan produce has never developed. The Kenyan horticultural export trade has been based entirely on air freight.

The seasonal inadequacy of air cargo facilities was felt as early as the 1950s, but the introduction of wide-bodied carriers and a few charter lines in the 1970s was able to handle much of the expanded production and trade. Still, access to air cargo space proved problematic for smaller firms (lacking permanent "relationships" with airline cargo staff), especially during the peak export months. Air cargo space has increased in the 1980s, but not nearly as much as has the demand for it. Air cargo limitations are felt throughout the main October-June export period, but particularly during November to January. Most

produce going to the U.K. market must be transhipped via other European countries.

The reasons for the air cargo shortage are many and the problem can not be discussed in detail here, but a short list of causal factors might include:

(1) the weak direct involvement of Kenya Airways in carrying horticultural cargo and its obstruction of cargo plans proposed by alternative charter and IATA airlines;

(2) the high customs duties on imports into Kenya that have reduced the south-bound cargo traffic from Europe, and thus cargo space for the return journey;

(3) the restrictions on charter licensing and permissible types of cargo on charter flights as laid down by the Kenyan Civil Aerodromes Board;

(4) the high fuel charges to airlines relative to those charged in other African countries, with higher fuel taxes being imposed against charter airlines;

(5) the Kenyan Government's controlled freight rates for horticultural produce, which are below IATA rates;

(6) the growth of the Kenyan flower export trade. As freight charges for flowers are higher than for fruit and vegetables, the airlines prefer to take flowers; and

(7) the growth of air cargo requirements out of South Africa as a result of an expanded horticultural trade and increased emigration due to the political situation. Most commercial airlines stopping in Nairobi initiate their flights in Johannesburg.

At any one time thirty or forty exporters may be seeking to get cargo space from the commercial airlines. The airlines may give several firms an indication of available space, but this is subject to change as produce up-take from Nairobi will depend on cargo up-take from previous stops (particularly Johannesburg) and passenger load. The competitive, last-minute scramble for space is accompanied by various malpractices and a high level of uncertainty for those firms that lack a strong personal relationship with the airline cargo staff.

Growth and Contribution of the Asian-Vegetable Trade

The Kenya/U.K. trade in Asian vegetables expanded considerably from the late 1960s until 1983.(22) Since then there has been a decline in the level of trade. The growth of the Kenya/United Kingdom trade in Asian vegetables can be seen in the following table:

Kenya/U.K. Trade in Asian Vegetables (Tons)

Year	Auber- gine	Okra	Chillies	Karela	Mooli	Dudhi	Other Asian Veg.	SubTotal	Total
1968*	30	99	158					289	576
1970*	98	82	274					613	1067
1972*	746	151	471					119	1787
1974	1060	152	688	181	250	98	715		3144
1976	1021	263	882	307	235	201	1184		4093
1977	1260	300	980	215	307	171	1126		4359
1978	1382	361	1209	515	371	257	1223		5318
1979	1622	735	1508	661	365	295	**		**
1980	1618	812	1340	758	241	295	1544		6608
1981	1666	978	1328	840	145	346	1554		6857
1982	1887	1121	1563	962	126	368	1664		7683
1983	2047	1627	1746	980	101	477	1964		8942
1984	1767	1506	1625	914	30	571	2057		8440
1985	1701	1278	1940	979	4	523	1534		7959

(Source: HCDA Trade Statistics)

*Kenyan exports to all destinations. U.K. probably accounted for over 90 percent of these totals.

** Data not available.

As can be seen in the data, there has been fairly continuous growth in the overall trade in Asian vegetables.(23) For some items, trade volumes have stagnated or declined over the past five years. This is most notable for mooli. The market for this product has largely been taken over by cheaper Italian, Dutch, and British supplies. Kenya's market share for aubergine has been substantially reduced as the bulk of increased U.K. imports have been provided by the Netherlands and Spain.(24)

The trade downturn for 1984 and 1985 (and now 1986) reflects changes on both the supply and demand sides. The major decline in 1985 partly reflects the impact of the 1984 drought. The declining Asian-vegetable exports are also a result of the reduced emphasis that a few leading exporters have placed on Asian vegetables as part of their overall export basket. These

exporters have placed increased attention on the procurement and sale of higher-value items, particularly french beans. On the demand side Kenya is beginning to face increased competition from European and non-European sources for okra and chillies. While Kenya still retains a competitive advantage due to its ability to provide the full range of Asian vegetables, many alternative sources are beginning to eat away at the virtual monopoly position that Kenya once held in this market. Importer dissatisfaction with the reliability and continuity of supplies as well as the uneven quality of Kenyan produce is pushing this source diversification at a faster pace.

Foreign Exchange Earnings

Using the HCDA's minimum export prices as a guide to actual sales earnings for these crops, one finds that the foreign exchange earnings for this group of vegetables have been the following:

1981	Ksh	47.3 million
1982		54.5 million
1983		67.0 million
1984		76.3 million

The minimum export prices may understate the actual value of sales by 10-20 percent. Even disregarding this fact, in 1984 the export earnings for Asian vegetables were equivalent to 3,763,000 Kenyan pounds, which ranks this commodity group well above the majority of the items listed as "principal" export commodities in the Government's Statistical Abstract. Export earnings from Asian vegetables exceed those for all individual categories of manufactured goods other than chemicals and cement.

Farmer Participation

While the aggregate growth and export earnings of the Asian-vegetable trade are important, the subsector's main impact has been felt through exporter procurement of these vegetables. Initially exporters obtained produce from their own farms or from medium- to large-scale Asian or European farmers. In the late 1960s, in the wake of a series of Kenyan Government measures to Africanize various aspects of the economy, an exodus of Asian farmers from the Kibwezi area began. Africans who had worked on the Asian-owned farms moved on to produce Asian vegetables either on their own farms, on land leased temporarily to them through a government irrigation scheme, or on larger African-owned farms.(25) One Asian farmer whose family had lived in Makindu

for many years began in the mid-1960s supplying both his and outgrower-farmer produce to Nairobi-based exporters. He purchased from both small- and large-scale farmers. By 1972 he withdrew from farming and established his own exporting company called Makindu Growers and Packers. By providing technical advice, market access, and (occasionally) production inputs, this firm stimulated Asian-vegetable production for export from Kibwezi farmers.

By the late 1970s small-scale farmers were becoming the most important source of these vegetables. In the early 1980s, small-scale farmers probably accounted for 75-80 percent of the Asian vegetables that are exported. The trend in the mid-1980s has been a move back in the direction of procurement from larger-scale production units. The major involvement of smallholders in the Asian-vegetable sector contrasts, however, with the export procurement systems for crops such as pineapple, passion fruit, french beans, flowers, and strawberries, where a substantial majority of produce derives from medium- and large-scale farms. (26)

Also important is the location of Asian-vegetable production. The bulk of Asian-vegetable supplies has come from the semi-arid areas of Machokos District such as Matuu, Kibwezi, and Mtito Andei, where over 3000 smallholder farmers are attached to government-supported irrigation schemes. In recent years Asian-vegetable production has also expanded to distant Lotokitok, on the slopes of Mt. Kilimanjaro. Asian vegetables have provided an important source of income and employment for these areas, becoming the most important (and widespread) cash crop in certain locations.

Income Generation

Available data on farmer yields and sales of Asian vegetables are extremely poor, and what data do exist show tremendous yield variations among farmers. Prices paid Asian-vegetable farmers also show considerable variation, yet even when using relatively low yield price estimates, Asian vegetables compare favorably with other cash crops and food crops in terms of gross producer income. The data below for cash and food crops are calculations by USAID/Kenya of the average gross income of crops over the 1979-1983 period.

Average Gross Income Per Production Season (Ksh)

Cash/Food Crops		Asian Vegetables	
Sugar	18,559	Karela	24,000 (a)
Tea	11,227	Chillies	18,000 (b)
Coffee	9418	Okra	16,500 (c)
Pyrethrum Ex.	3736	Aubergine	12,000 (d)
Maize	1584		
Oilseeds	1345		

(a) Yields vary between 2-6 tons/acre and prices between Ksh 5-8/kg. Used here is a yield of 4 tons/acre at Ksh 6 per kilo.

(b) Yields range from 2-6 tons/acre and prices between Ksh 4-9/kg. Used here is a yield of 3 tons/acre at Ksh 6 per kilo. Can get more than one crop per year.

(c) Yields range from 2-6 tons/acre and prices between Ksh 4.75-9/kg. Used here is a yield of 3 tons/acre at Ksh 5.5/kg. Can get up to three crops per year.

(d) Yields range from 5-12 tons/acre and prices between Ksh 1.5-3/kg. Used here is a yield of 6 tons at Ksh 2 per kilo.

This comparison is for illustrative purposes only. The data for the cash and food crops is now slightly outdated. Even though I have used relatively poor average yield estimates and average price estimates toward the bottom of their range, some smallholders may obtain less positive results. The estimates are for gross rather than net income; however, one source has calculated the net income for an acre of thin chillies, okra, and karela to be Ksh 9000, 12,800, and 7000 respectively. (27) These levels are higher than the estimated gross income for many other cash and food crops.

Employment

Most Asian vegetables are labor intensive relative to other crops grown in Kenya. They are grown throughout the year, although the peak production of most items takes place over the October-June period. The employment opportunities created by expanding Asian-vegetable production have led many young people in parts of Machokos District to remain in their home area rather than migrate to Nairobi or other locations in search of work. Compare below estimates of labor intensivity for different crops:

Man Days Needed Per One Hectare Crop

Hybrid Maize	152	Aubergine	277
Cotton	235	Okra	304
Coffee	294	Chillies	378
		Karela	510

(Sources: Hormann and Thuo [1979]; own calculations)

The Asian-Vegetable Procurement System

While it may be said that the Asian-vegetable trade has made a range of contributions to the Kenyan economy, this does not imply that the production and marketing system for these crops has functioned efficiently. To the contrary, the coordination of production with marketing has been extremely weak, and the overall system seems to operate in a state of perpetual disequilibrium. Subsector participants, especially farmers, operate under considerable uncertainty. In recent years overall production has far outstripped demand, while on a seasonal basis the supply of particular items has been inadequate. Not only has produce wastage been high, but the produce mix of exporters has been thrown into an imbalance. This has undermined the competitive position of Kenya in the U.K. market.

In this section we discuss the general features of the Asian-vegetable procurement system. We note the inefficiencies and uncertainties that the system creates. Together with the overseas market conditions and the wider political framework, this systemic disequilibrium serves as the backdrop to one export company's attempt to introduce formal contractual arrangements into the procurement system. This case is discussed in the subsequent section.

What we will discuss here is the main features of exporter procurement of Asian vegetables from smallholder farmers. All exporters obtain a share of their supplies from medium- to large-scale growers. This share varies by company. Some companies rely largely on a few larger growers with whom they have dealt for many years. For these firms, smallholders may only be a residual supply source. More commonly, exporters obtain the bulk of their supplies from smallholders and rely on larger farmers primarily for items requiring greater investment (i.e., wires for trellising) or higher technical standards. Those Asian vegetables that require high humidity for growth are contracted to larger farmers at the coast. Chillies grow well at Lake

Naivasha and as exporters are already procuring french beans from the large farmers there, this Asian vegetable is added to their order.

The nature of exporter/largeholder relations differs significantly from that of exporter/smallholder relations. The relationship is generally more personal, more intensive, and longer lasting. It sometimes is based on a higher level of trust and loyalty. Bargaining power is not as skewed as in the exporter-smallholder case. The relationship is also not as politicized. Communication flows are better than in the smallholder case. For these reasons the exporter/largeholder links have generally been satisfactory from the perspective of both exporters and farmers. Supplies from large farms are inadequate to meet demand, however. Some large-farm areas are not environmentally suitable for Asian vegetables. In other areas where large farms exist and where some Asian vegetables can be grown, farmers have preferred more familiar crops or crops yielding higher revenue per acre (i.e., french beans). Larger farmers operating with pump irrigation systems have demanded continued price increases to maintain their plantings. Seasonal labor shortages have also constrained large-farmer production in areas such as Kibwezi.

Smallholder producers of Asian vegetables have thus been sought. Even at lower prices and with lower and varying yields, smallholders in parts of Machokos District would find growing Asian vegetables for export an attractive venture. The procurement system for smallholder Asian-vegetable supplies, however, has not functioned efficiently. Let us examine this system.

Demand for Smallholder Supplies

The demand for smallholder supplies of Asian vegetables is a derived demand. It is an aggregation of the requirements of a large number of individual companies, which themselves derive from:

(a) the level and adjustment of on-going orders by U.K. importers;

(b) the quantity of air cargo space allocated and then actually provided to the exporter;

(c) the relative importance of Asian vegetables in an exporter's produce mix; and

(d) the exporter's supplies of produce from larger farmers.

These are variables, not constants, and thus the quantity of Asian vegetables required from smallholders shows continuous variability. When combined with variable production and poor information flows, the seeds of disequilibrium are sown.

Typical Procurement Arrangements (28)

In a production area such as Matuu (Machokos District) the exporter's contact with farmers is through his truck drivers and a few local agents whom he may appoint to represent him. For smallholder supplies most exporters work through agents, usually local shopkeepers or farmers who own or rent a shed in a market area. These agents try to recruit farmers to grow for a particular company. General procedures vary by company. Some provide agents with cartons on a weekly basis and give orders for a week, perhaps scattered over three or four days of pick-up. An agent must distribute cartons and make sure farmers make deliveries to his stall in time for the collections. Other companies bring cartons only on the morning of collections and specify their orders on that day. An agent may have some farmers operating on accounts while other farmers deliver on a strictly cash basis. Those with accounts generally receive a steady price for individual products and may be paid monthly or fortnightly. Those delivering on a cash basis will face widely fluctuating prices. Exporters will inform their truck drivers of the daily prices. The actual prices that "cash farmers" receive and the extent of delay in payment depend upon their relationship with the agent.

The weak coordination of the trade can be illustrated by several features, including:

1. Absence of Production Support--- Most exporters have had no direct involvement in the smallholder production process. They view themselves as trading companies neither capable of nor responsible for providing smallholders with either production inputs or technical advice. These are seen to be the responsibility of other institutions. While the seeds/chemical trades and various farmer associations are seen to be responsible for the inputs side, the government extension service and the HCDA are seen to be responsible for technical assistance to farmers.

The location of some of the production sites, the specialist nature of these crops, and the prior notion that these crops are not important to Kenyan Africans have resulted in an absence of production services to smallholder Asian-vegetable farmers. This

vacuum can most clearly be seen in the area of technical advice to farmers. In the main areas of Asian-vegetable production the numbers of extension staff have been few and their mobility limited by inadequate transport means. Trained as generalists and having only a few of the Asian vegetables described in their Ministry of Agriculture Handbooks, these extension people have not been in a strong position to make recommendations to farmers. What they know about Asian vegetables they have learned from farmers. One extension worker views his activities as being equivalent to "running in the fields."

2. Inappropriate Quantities or Produce Mix--- Each participating exporter is continuously unable to obtain his full vegetable requirements in the appropriate mix to meet overseas orders. Each day he obtains a surplus of some items and insufficient quantities of other items. Being short of certain items is particularly problematic, as it upsets the entire produce basket. Exporters react to this situation of uncertain product mix by (a) over-ordering supplies and then rejecting or repacking produce, (b) over-ordering supplies and keeping excess items for shipment the next day, (c) over-ordering supplies and then selling excess items in their own retail outlet, or (d) exchanging items held in excess for short items held by other exporters at the airport. Only a few exporters have their own retail outlets and there is practically no demand for these items by the local processing industry (i.e., processing firms import chillie powder from the Far East) so option "c" is not commonly pursued. Each of the other options are common.

Option "a" shifts quantity risks onto the farmers. Option "a" can be carried out in the field or in Nairobi. Exporters may give their truck drivers target quantity figures for different vegetables. Once these targets are reached in the course of their collection rounds, the collectors may cease further purchase of these items, perhaps on the basis of "poor quality." Another traditional practice has been to match supplies with orders at the last-minute documentation stage at the airport, save some extra supplies, and then return additional surplus on "quality" grounds. Farmers report that sometimes they receive back cartons that either are not theirs or are half empty.

2. High Wastage and Speculative Production--- While a few exporters do give an indication to farmers (or farmer groups) of their expected requirements over the course of an export season, there is no coordinated planning procedure for Asian-vegetable production. While Asian-vegetable production is carried out all year long in the main smallholder producing areas of Matuu and Kibwezi, there are weather-induced production peaks in December-February and April-June. During this first period Asian vegetables must compete with higher value horticultural crops for

the available air cargo space. During the latter period there is generally a surplus of many items. Most farmers growing Asian vegetables either must leave a sizeable proportion of their crop unharvested or face considerable wastage due to the lack of a sales outlet. Most farmers obtain seeds and then plant speculatively, hoping that a buyer will be found at harvest time. Wastage of produce may be 30-50 percent at times. Even when farmers do have ongoing relations with exporters, the latter sometimes give short-term notice to stop harvesting particular items.(29) Farmers located in areas with poor access roads may have even higher levels of wastage as some exporters simply do not send their trucks to these areas during periods of heavy rain.

3. Producer Price Variation--- Producer prices exhibit wide variability for the same crops in the same places. These price differences are not generally linked to quality differences. Rather, they are linked to short-term supply and demand conditions, the relative desperation of competing exporters, and price manipulations of the local agents serving the exporters. Most exporters pay different farmers different prices. Sometimes farmers who have accounts with exporters are paid higher prices, while other times farmers selling on a cash basis receive a premium. Even when a company has established a consistent policy, its implementation by staff or local agents may involve considerable discretion. Company staff collecting produce and paying cash are sometimes in a position to pay farmers below the company's stated price. Local agents who may also be farmers are in a position to underpay less-informed farmers;

4. Quality Variation--- Produce quality exhibits wide variation at farm and export level. The industry lacks a consistent set of quality guidelines for many of the Asian vegetables. Different exporters set different quality standards, and produce rejected by one firm may be accepted by another. In addition, quality standards are adjusted by exporters in the context of supply and demand conditions. We noted above the upward shift in "quality standards" when supply exceeds demand. Quality standards are adjusted downward over the July-September period when some crops are in short supply. Quality control is thus a vehicle for quantity control. Not only exporters behave opportunistically in relation to produce quality. A common practice of farmers is to put good quality produce at the top of a carton and bad produce on the bottom, hoping that the carton will pass through the exporters and government inspectors undetected. Previously it was the exporter who paid for this practice through the quality claims made by overseas buyers. More recently, some exporters have each contributing farmer write

a designated code number on the side of the carton so that the culprit can be detected and deductions made on future purchases.

5. Information Problems--- Small-scale, Asian-vegetable farmers are poorly informed about the changes in supply, demand, or the air cargo space situation. With such a large number of exporters and the uneven buying behavior of some, farmers have difficulty gauging demand. Communications are very poor between Nairobi and several growing areas, and information is generally passed to farmers by company collection-truck personnel. Delays in communications may result in farmer losses as produce is harvested without exporter intention to purchase. Exporters tend to pass on only short-term information regarding the quantity of requirements. When local agents are responsible for providing information to farmers, there is scope for distortion. Local government staff do not understand the general patterns and complexity of the trade, and are thus not in a position to advise farmers on a production and sales strategy.

In a contentious trading environment information becomes a perishable commodity. Information is a key element in reducing risks. As long as farmers can be held in the dark, the risks of cargo off-loads and supply/demand imbalances can be shifted to them. Information flows take a "negative" form. Exporters will inform farmers when the overseas market is depressed or when the quality of produce is below some standard set by the exporter. Positive feedback on good produce or good sales results is rare.

6. Weak Intermediation--- The weak bargaining position of farmers, the poor information flows, and the absence of effective production planning would all appear to call for the involvement of farmer cooperatives or associations in the Asian-vegetable system. A large number of such groups have either emerged ostensibly to help vegetable farmers, or have diversified beyond interests in coffee or cotton to include vegetable farmers. Generally, these cooperatives have made only a minimal contribution to the Asian-vegetable sector. Some of these groups are "paper cooperatives" consisting of a list of names and office holders. Other groups have "bodies with no legs" lacking support and legitimacy in the eyes of farmers and being used for political purposes by exporters rather than carrying out actual marketing functions. Cooperative officials have been adept at corresponding with exporters and government officials, laying out terms of trading agreements or asserting the rights of farmers, but vegetable cooperatives have been singularly unsuccessful in coordinating the production and marketing of the farmers on their lists.

While not averse to the idea of cooperation, many farmers have come to associate formal cooperative organizations with the

deduction of cesses from farmers in order to pay for the offices, telephones, and trips to Nairobi for a few "big men." Where horticultural cooperatives have operated, internal power struggles have frequently led to the breakaway of splinter groups with both exporters and government officials not being clear about whom to deal with.

7. Widespread Mistrust--- Exporters perceive most farmers as opportunists selling to whoever provides them with the best terms at any one time. Farmers view exporters as unscrupulous and unreliable. Commitments are made to tie down the other party and reduce one's own risks. Under a range of circumstances the commitment will be readily broken. Cooperative officials mistrust exporters and farmers while the latter two mistrust the cooperative officials. Farmers view the HCDA as supporters of exporters while the exporters view the Authority's intentions with suspicion and its direct participation in the trade with alarm.

A Contractual Scheme for Asian Vegetables

Within the context of this rather chaotic trading network an effort was made between 1982 and 1985 to organize exporter/ smallholder relations on a contractual basis. The scheme involved approximately 500 smallholders in the Matuu area linked by contract and farmer groups to the company, Kenya Horticultural Exporters Ltd.

Background of Matuu-Yatta (Machokos District)

During the period 1954-59 the 37 mile long Yatta Furrow was constructed by a work force of Mau Mau detainees. The furrow was fed by the Thika River and was initially geared toward supplying water for domestic use and for cattle. Not until the mid-1960s, with the initiation of settlement schemes, was water from the furrow used for irrigation purposes. Throughout the late 1960s and early 1970s small groups of people were settled on one- to three-acre plots near the furrow with feeder channels providing irrigation water. The first plantings on these plots was in the spring of 1967. (30)

From the beginning the Matuu farmers planted vegetables on the irrigated parts of their land, and maize and cowpeas on rain-fed sections. Availability of water permitted the farmers to produce tomatoes, cabbages, and chillies at times when supplies were short from the rain-fed areas in Central Province and in other parts of Machokos District. During these times Nairobi

traders would travel over nontarmac roads to reach the scheme. At other times of the year Matuu farmers were heavily constrained by transport, as bus links to Nairobi or Thika were weak and preference was given to passengers over produce. Insufficient coordination of farmers restricted the hiring of lorries to transport produce to Nairobi. (31)

In the mid-1970s the Horticultural Crops Development Authority attempted to assist Matuu vegetable growers by establishing a few grading, packing, and collection centers and linking local farmers to the nation-wide Horticultural Cooperative Union, to food processors, and to exporters. Various companies made inquiries through the Ministry of Agriculture as to whether the Matuu farmers could increase their production for export. In 1977 Schluter and Co. requested birdeye chillies for local processing. A year later M/S Kenez came forth with a request for 30 tons of Asian vegetables per week to export. In 1979 Al-Khalidiya Trading company inquired about supplies of fruit to export to Saudi Arabia.

As with the efforts of the HCDA, these firms needed to establish a link with a local organization. The only existing farmer's organization was the Masinga Farmers Cooperative Union, which was handling cotton. The HCDA stations were turned over to the Union to administer, and exporter requests were passed on to the cooperative. Few farmers felt that the Union represented their interests, however, after it had generally mismanaged their cotton crop and delayed payments for their vegetables. The HCDA packing stations were closed and the produce inquiries were not followed up. (32)

Still, by the late 1970s a few exporters of Asian vegetables had become aware that good quality vegetables could be obtained from Matuu. They thus employed some local farmers to act as their agents, buying from other farmers and then meeting the exporter's trucks in Thika. It was not until the 1980/81 season when the Thika-Kitui road was tarmacadamed that exporter trucks actually went to the Matuu area. Only two exporters were purchasing on a sustained basis in Matuu. Neither firm was directly involved in supporting production. A few other exporters made purchases on an ad hoc basis.

Farmers growing Asian vegetables for export were not satisfied with the prevailing marketing arrangements. Fluctuating prices, uncertain purchases, unreliable payments, and quality adjustments were seen as common, and farmers had no bargaining power vis-a-vis exporters. A group of farmers contacted the director of the Horticultural Crops Branch of the Ministry of Agriculture asking for his assistance. This director himself had a farm in Matuu. He encouraged the farmers to form

an association or "self-help" group and put them in touch with an exporter who might consider a more formal marketing link with the Matuu farmers. This firm was Kenya Horticultural Exporters Ltd.

Kenya Horticultural Exporters Ltd. (KHE) (33)

KHE is a partnership of two families, both with origins in Gujarat, India. The families entered into business together in the mid-1950s to form a fresh-produce retail outlet. The firm imported fresh fruit and expanded into local wholesaling, especially for potatoes, onions, and garlic. In the mid-1960s with the involvement of several European farmers at Naivasha, they initiated an export trade. At that time the only other important exporter was the Horticultural Cooperative Union, although there were a few small-scale competitors.

The company's early exports consisted primarily of french beans, pineapples, and strawberries obtained largely from European farmers and sent on consignment to a broker in London's Covent Garden Market. In the late 1960s the company began exporting Asian vegetables to two Indian firms based in London. Asian vegetables were obtained from a few European and Asian farmers.

During the 1970s KHE emerged as the leading exporter, expanding its volume of trade and significantly diversifying its product mix and market outlets. It was the first company to enter the West German market and played an important role in the opening of the market for Kenyan french beans in France and Belgium. The company handled a quarter to a third of Kenya's fruit and vegetable exports over the decade. Asian vegetable exports to the U.K. remained important, accounting for 30-40 percent of the company's export volume. In 1973 one of the company's founders emigrated to the U.K. and shortly thereafter established his own fruit and vegetable import and distributing company. This U.K. affiliate played a major role in expanding the distribution of Asian vegetables outside of the Greater London area.

The company continued to obtain its supplies from medium- to large-scale farms in areas such as Naivasha, Thika, Embakasi, Kibwezi, and the coast. It was developing a reputation for reliability in its dealings with farmers. For this reliability farmers needed to pay a risk premium--KHE's producer prices were generally 10-20 percent below those of its competitors. Having developed excellent relations with several airlines, having strong overseas marketing links, and purchasing in sizeable volumes, KHE was able to exercise considerable bargaining power in local price negotiations. "Loyal" farmers could obtain inputs

and credit from the company. If unforeseen market downturns occurred these "loyalists" would be compensated for part of their production costs. The company was the first to provide written contracts to farmers growing vegetables for export. This was undertaken with several farmers growing french beans and sweet pepper.

KHE has continued to expand its trade in the 1980s. It is one of only a few Kenyan firms that have maintained a reputation in Europe for quality produce and reliable service. At any one time the company is exporting to up to a dozen countries and can send 50 or more different items. While Asian vegetables and french beans have continued to comprise a major part of the company's export volume, the company has been Kenya's leading exporter of avocado, mango, passion fruit, and more exotic produce such as apple bananas. In recent years KHE's exports of fruit and vegetables have reached the following levels:

1982	4315 tons
1983	5170
1984	5881
1985	5423

Over this period, the company has accounted for between 21 and 25 percent of the total volume of Kenyan fruit and vegetable exports.

When KHE was approached in 1982 by the Ministry of Agriculture official on behalf of the Matuu farmers, the company was in a confident mood. By that time it had succeeded in developing strong marketing links to a number of countries. Its U.K. affiliate was diversifying its product range and was becoming actively involved in marketing channels supplying multiple chain supermarkets. KHE was in the process of hiring an experienced horticulturalist who had managed the farm of one of the company's main suppliers. It had just moved into a new Ksh 24 million complex incorporating offices and packing, grading, and cold storage facilities. The company's operations were previously scattered among three Nairobi sites. The cold storage facilities would not only help deliver a higher quality product with a longer shelf life, but would enable the company far greater flexibility in its procurement arrangements. The cold storage facility would enable the firm to carry out more effective grading and quality control and to accommodate surpluses of produce.

Thus, KHE in 1982 was in a confident mood looking to expand. In terms of Asian vegetables the company had been experiencing procurement problems as its policy of low but steady prices was making the firm uncompetitive with other exporters whenever supplies of particular items were short. The other exporters merely increased their prices and made cash purchases. In addition, the company was finding that some of its traditional suppliers were not able to grow okra and chillies in sufficient quantities and at high quality. The company's Asian-vegetable export mix was thus out of balance and was constraining the marketing effort of its U.K. affiliate.

The Matuu situation appeared to provide the company with a tremendous opportunity. The farmers there were looking for a reliable buyer. Several Asian vegetables as well as other items could possibly grow well there under irrigation. The company had never formally contracted smallholder farmers before, but a contractual framework was viewed as the best way to signal the company's long-term intentions both to the farmers of the area and to government officials aware of the marketing problems faced by the Matuu farmers. The company hoped that if indeed Matuu became a major new source of export produce, then its contractual links would enable it to have prime access to the additional supplies.

The Scheme

Over three seasons--1982/83, 1983/84, and 1984/85--KHE operated a contracting scheme for Asian vegetables and selected other items in the Matuu area. At the height of the scheme more than 500 farmers were selling produce to KHE, and this enabled the company considerably to expand its exports of Asian vegetables. In the beginning of 1985 the project virtually collapsed in the face of the drought-induced shortage of produce and severe competition from other exporters for the farmers' output. Since then the company's presence in the area has diminished greatly, and during the 1986/87 export season no more than 30 Matuu farmers sold to the company. Still, Asian-vegetable production has continued to expand in Matuu. It is KHE's competitors who are picking the fruits of this expansion.

1982-83

In June of 1982 a contract was worked out between KHE and a committee representing the Matuu farmers. The program laid out was extremely ambitious, reflecting the newly strengthened confidence of the company. Matuu farmers would grow for KHE not only several Asian vegetables they were familiar with, but also

substantial quantities of french beans and smaller quantities of melons and even gooseberries. The company intended to enter with a "blanket," spreading seeds, chemicals, and advice, and generating a major new supply source of export produce. There would be no trial period. Inputs would be distributed and KHE purchases would begin in October. The program specified KHE's weekly requirements over a period from October 1 to May 31 as well as guaranteed prices that would hold over the entire period. Production outside of this period would be at the farmers' risk and would be purchased at negotiated prices.

KHE would not deal directly with each of the individual smallholders. The company had not previously operated in the Matuu area and had no past contact with any of the large- or small-scale farmers in the area. As it wanted to develop a project on a fairly wide scale it required local intermediaries. The Matuu Horticultural Marketing and Suppliers Committee, comprising some of the area's larger, more influential farmers, was seen as an appropriate intermediary. While initially the Committee was supposed to play the role of communicator, negotiator, and advisor for the farmers, the intention was that the Committee would seek small farmer members and register as a formal cooperative.

Farmers preferred that the Committee remain purely a communicative and advisory body with no decision-making authority. They resisted the Committee's efforts to raise contributions from them to set up an office and cover the petty expenses of the Committee. The farmers preferred that KHE deal either directly with them as individuals or through a number of collection stations. Having individual accounts with several hundred smallholder farmers was viewed by KHE as both expensive and administratively infeasible. KHE's horticulturalist and an agricultural officer in the area established eight collection centers in the area. Twenty to twenty-five farmers were assigned to each center, and they elected a center manager. KHE would hold separate accounts for each collection center and provide inputs and payments through their managers.

The KHE horticulturalist instructed each center on what crops and what acreage to plant and provided the inputs to the centers. At each center he initiated a small nursery to facilitate the transplanting of seedlings. He provided some instruction to center managers and individual farmers on production techniques and grading. Other company staff worked part-time on the project, especially in monitoring farmer grading and packing. The company had insufficient manpower, however, to provide more than a minimalist extension service.

In drawing up the contract, each side acknowledged the prevalence in the trade of sudden quantity adjustments on the part of exporters. Thus, a clause was written into the agreement that "the KHE will undertake to collect all exportable produce at the given collection time. In the event of unavoidable circumstances, the KHE will negotiate with the committee and put in writing a suitable value of compensation for any uncollected produce." This clause would theoretically lower the impact of the major marketing risk facing Matuu farmers--i.e., lack of a market outlet for their crops.

Distribution of inputs began in June 1982, initially on a small scale. For several months the company provided a total of about 20 kilos of seed/month. Nurseries were started at each of the collection centers and on some of the larger farms. Among the Asian vegetables, the company wanted to have Matuu farmers concentrate on only a few items that were upsetting the export basket because of their short supply. Particular attention was given to okra, thin chillies, and fresno chillies. Matuu farmers were also keen on growing aubergine as they knew it grew well in the area and was far less labor-intensive than some of the other crops. By October, input distribution was at full steam with okra seed alone being supplied at the rate of 60 kgs. per month, enough for 20 acres of planting. Most farmers were planting 1/4 to 1 acre of Asian vegetables. Several larger farmers, who had individual accounts with KHE, planted up to five acres of Asian vegetables.

Matuu experienced adequate rainfall over the 1982-83 season to produce a good crop. Over the October 1982-September 1983 period, KHE purchased 575 tons of Asian vegetables from the Matuu area. This represented more than 30 percent of the company's exports of this group of vegetables for that year. KHE's purchases in the area had a value of Ksh 2.58 million. Four items accounted for 84 percent of KHE's Asian-vegetable purchases in Matuu. These items were okra (195 tons), aubergine (133 tons), thin chillies (99 tons), and fresno chillies (59 tons). The Matuu farmers had prior experience with thin chillies, so the good results for this crop were not surprising. Fresno chillies were introduced by KHE and brought good harvests from November to May. The results for okra were disappointing, although supplies from Matuu did help KHE improve okra's position in its overall export basket. The 60 kilos of okra seed per month that KHE provided from October to June should have generated 40 tons of produce per month, even with a poor yield of 2 tons an acre. Actual okra purchases were the following (in tons):

Oct 1.6	Feb 18.0	Jun 50.9
Nov 6.6	Mar 18.2	Jul 11.8
Dec 11.4	Apr 26.6	Aug 11.8
Jan 17.9	May 23.3	Sept 3.3

Only in one month, June, did purchases come anywhere close to expected levels. Okra supplies in June were actually in excess of KHE's needs, and it brought that product into surplus at the time when Cypriot okra was coming onto the U.K. market. The subsequent collapse of supplies over the July-September period was weather induced with chilly evenings restricting okra growth. In the course of the season, competing exporters had made cash purchases of some of the produce grown under the KHE contract. Okra was one product where such "leakage" was important. When these other exporters stopped purchasing okra in June, the entire crop was left for KHE. The inadequate supplies at other months cannot be accounted for by leakages alone. Many okra fields were hit by disease, and yields were very low.

Aubergine also proved to be a problematic crop for the season because of extremely uneven deliveries. Farmers utilized the KHE contract as a sort of safety net, planting speculatively outside of the contract, looking for alternative buyers at higher cash prices, but then falling back on the KHE commitment when market circumstances necessitated. KHE specified in the contract that its requirements were 12 tons/month. Actual KHE aubergine purchases were the following (in tons):

Oct 1.3	Feb 19.8	Jun 10.4
Nov 5.2	Mar 21.9	Jul 6.6
Dec 9.4	Apr 25.1	Aug 4.7
Jan 9.7	May 9.8	Sept 8.7

The figures show that during the main October-May season the company's requirements were not met in five of the eight months, but that in the three other months deliveries were approximately double the company's expected requirements. A surplus of aubergine had emerged by mid-February and the farmers needed the KHE outlet. The company was not sure whether excess supplies were due to better than expected yields or entirely to overplanting, and so continued to buy the produce on offer. By late April the company received a telex from its U.K. buyer noting that the aubergine market was depressed, that KHE was sending too large a volume, and that there were severe quality problems. The company immediately stopped its purchases of aubergine from the Matuu farmers. It informed the Head of the

Horticultural Branch of the Ministry of Agriculture that this step was being taken because of the quality problem. The Matuu Committee argued that KHE graders were inspecting the produce and passing it for loading into the collection trucks as before. While acknowledging that heavy rains had affected some of the crop, the Committee argued that some of the crop was still good and that KHE needed to abide by the clause to take "all exportable produce" or else provide due compensation. The dispute ended several weeks later with KHE undertaking limited purchases. No compensation was provided to farmers as the company showed that it was making purchases in excess of the contract.

An effort to have the Matuu farmers grow bobby beans during the 1982-83 season proved to be a disaster. The effort was concentrated on some of the larger farms in the area, rather than the settlement farmers. The beans encountered severe disease problems. Nearly two tons of seed were lost.

1983-84

The 1983-84 season was highly successful for the project. New collection stations were started and additional farmers sought individual accounts with KHE. At its peak perhaps 500 farmers were linked into the KHE system. KHE increased the level of input supply and expanded the range of Asian vegetables that it purchased from Matuu. Several nurseries were operating effectively and helped provide higher quality aubergine and thin chillies. Over the period from October 1983 to September 1984, KHE purchased nearly 839 tons of vegetables from Matuu at a value of nearly Ksh 4 million. These purchases accounted for about 45 percent of KHE's Asian-vegetable exports that year.

It is possible that a similar volume of purchases was made in the area by competing exporters buying not only from the farmers ostensibly growing under the KHE contract, but additional farmers who were encouraged by the income obtained by the contract farmers. While the other exporters were not providing inputs, the farmers were obtaining seeds outside of the KHE contract from shops in Nairobi. The contractual scheme was thus generating a general production expansion in the area.

KHE's exports of Asian vegetables expanded over the year as its basket was more closely coordinated with the requirements of its U.K. affiliate. Additional supplies of good quality okra and chillies were sent to a buyer in France. The bulk of KHE's requirements for several relatively minor items was obtained from Matuu.

Still, the year was not without problems. While less dramatically than during the first year, supplies continued to be uneven and deliveries rarely reflected the requirements set out in the 1983-84 contract. Aubergine supplies continued acting like a roller coaster, sometimes below orders and sometimes considerably above. The company's monthly order (for October to May) for Asian vegetables was about 93 tons. Actual purchases averaged 85 tons; but two months featured purchases of less than 70 tons, and two months had purchases of over 108 tons. The company provided large quantities of chola seed hoping to increase production of this item. Chola is a type of pigeon pea that the local farmers like to eat. The company was not getting the deliveries of the crop that it had expected and discovered that farmers were eating the leaves of the plant or selling the crop locally.

Some problems were encountered with collection center managers not paying farmers. As there were no banks in the Matuu area, KHE would write a check in the name of the manager who would then be responsible for distributing the money to individual farmers as per the receipts they were given at produce delivery. Several center managers were dishonest, and farmers began losing confidence in the collection center system. Some centers closed with a few farmers obtaining individual accounts with KHE while other farmers decided to sell to other exporters.

1984-85

The KHE-Matuu contracting scheme completely unravelled during the 1984-85 season. The short rains of March-April 1984 were lower than normal and the long rains of September-October 1984 completely failed. Drought conditions had set in in many parts of the country, adversely affecting agricultural production. Matuu farmers were still able to draw on the irrigation water of the Yatta furrow. The production of Asian vegetables continued to expand up until about February of 1985. KHE's purchases were at levels similar to those of the previous year, but farmers were restricted from irrigating during the day due to the shortage of water and the threat of water supply to Kitui town.

Reduced Asian-vegetable output in Matuu and shortages of supplies from other areas resulted in a chaotic scramble for supplies over the March to June 1985 period. Many exporters were attempting to obtain produce in Matuu and were offering prices well above those offered on the KHE contract. Compare below the prices offered by KHE with the prices reached in the cash spot market:

Prices per Carton (Ksh)

	KHE	Spot Market
Okra (6 kg)	25.5	70
Chillies (5 kg)	20.0	50-55
Aubergine (6 kg)	13.5	25-30
Karela (6 kg)	30.0	70-80

Thus spot market prices reached levels more than double those offered by KHE. KHE did not react to the situation fast enough. It initially maintained a policy of not entering into a cash price war, hoping that it had generated through its efforts sufficient loyalty from its farmers in Matuu. This view proved to be naive. Farmers were being swamped with attention by other exporters. An attitude spread that there was tremendous demand for Asian vegetables, that exporters could earn profits even if paying double the KHE price, and that KHE had actually been cheating them for a long period. KHE contacted the Matuu Committee and asked for their assistance in preventing farmers from selling outside the contract. The Committee responded that the problems were the company's fault since it had been "exploiting" farmers. KHE finally did react to the situation and sent out circulars announcing increased short-term prices. Other exporters merely adjusted their prices upwards to compensate. KHE suffered a costly loss by not recovering a large number of cartons that it had distributed during the season.

1985-86

KHE was not ready to abandon its efforts in Matuu. In May of 1985 it made proposals to the Matuu Committee for the following production season. It was agreed that all farmers growing for KHE must formally register with the Committee and would not "be allowed to sell any of his/her produce to any other buyer" or "be liable to paying damages to both the Group and KHE." They also agreed that "all farmers for KHE will only plant according to the programme as provided . . . [and] no member of the Group will be allowed to plant outside that programme."

The agreement was actually a last ditch illusion to save the project. Neither members of the Committee nor most farmers perceived that they had an interest in abiding by the terms. Other exporters were now more active in the area, setting up collection stations of their own. The KHE contract would truly be a safety net to fall into when higher price offers were not available. The KHE contract for the 1985-86 season called for 80

tons of vegetables per month. During October and November actual purchases averaged 11.3 tons. The project had indeed collapsed to competition. Only a small number of farmers continued supplying KHE on a continuous basis, and KHE supplies of inputs and technical advice virtually stopped.

Project Impact

Matuu is presently the leading source of Asian vegetables for export with purchases of nearly 100 tons/week being made at the height of the export season. Up to 2000 local farmers may be involved in this activity, with up to a dozen exporters purchasing on a consistent or periodic basis. The most important impact of the KHE project and its wider stimulation of Asian-vegetable production has been its injection of increased income and employment opportunities into a relatively deprived area.

In each of the past few years the Matuu farmers have probably supplied in the area of 4000 tons of Asian vegetables per year. Such a level of sales has a farm-gate value of between Ksh 20 and 25 million. Over the course of its three year project, KHE alone made purchases valued at over Ksh 10 million. Over this same 1982-85 period the Njoro Cannery project in Vihiga made payments to farmers totalling about Ksh 11.7 million, but while the payments of Njoro Cannery were spread across some 15,000 farmers, KHE's payments went to little more than 500 farmers. Sizable income increases have enabled many farmers to start small businesses, build permanent structures on their farms, and pay school fees. The impact of Asian vegetables can be most clearly seen in the development of Matuu town. In 1979 the town was a small site with only two shops. The town has grown at a phenomenal rate and now includes numerous streets filled with shops and various service businesses and cottage industries.

Asian vegetable production has also greatly affected the value of land in the Matuu area. In one settlement scheme area the cost of leasing land has risen from 400 sh/acre in 1983 to 2500 sh/acre in 1986. As for purchasing land, the cost in one area has risen from 1000-2000 sh/acre in 1977 to 6000 sh/acre in 1986. In another area land values have risen from 3000 sh/acre in 1982 to 10,000 sh/acre in 1986. The costs of part-time agricultural labor have also been affected. Wages for agricultural labor have risen from 5 sh/day in the early 1980s to 10-12 sh/day in 1986.

The project also had an impact on KHE. Through its operations in Matuu, KHE was able to build up its level of Asian-vegetable exports over the 1982-85 period. Its U.K. affiliate

was able to strengthen its competitive position in this product area. KHE was also able to send high quality okra and chillies to France. The impact of the project on KHE's Asian-vegetable trade can be seen in the following figures:

KHE Asian-Vegetable Exports

1980/81	1220 tons
1981/82	1350
1982/83	1830
1983/84	1850
1984/85	1750
1985/86	1085

(Source: Own approximations using disaggregated KHE export data according to customer)

One can see from the figures that the collapse of the project in the beginning of 1985 adversely affected the company's overall exports of Asian vegetables. While Asian vegetables comprised over 40 percent of the company's export volume during 1982/83, they comprised less than a 20 percent share during 1985/86. Despite the initial success of the project for KHE, most of the lessons that the company has learned from its experience have been negative. In the aftermath of the project, the company has sought to reduce the risks and transaction costs involved in Asian-vegetable procurement by concentrating on large farmer supplies (see below).

Alternative Non-Market Solutions?

With the collapse of the KHE project in Matuu, the procurement system for Asian vegetables has largely returned to its status quo ante disequilibrium situation. Smallholder Asian-vegetable farmers are faced with a situation of (a) weak bargaining power vis-a-vis exporters, (b) uncertainty over prices and the proportion of their harvest that will be purchased, (c) poor access to information on demand and transport, (d) difficult access to production inputs, and e) poor access to useful technical advice.

Difficulties in obtaining reliable and high quality supplies of Asian vegetables from smallholders is leading some firms to consider alternative sources. KHE has decided to concentrate its Asian-vegetable procurement on larger farmers. During the 1986-87 season less than fifty farmers throughout the country supply KHE with Asian vegetables on a regular basis. Four farms supply

60 percent of the company's requirements of thin chillies. Supplies of fresno chillies come from only six farmers. For aubergine, three farms now supply the bulk of the company's supplies with one farm alone providing 50 percent of requirements. Karela supplies are coming largely from one farmer who manages a series of farms at the coast. If the company can interest a few large Kibwezi farmers in growing exclusively for it, then it may withdraw from Matuu altogether.

Simultaneous with KHE's attempt to recruit a few large farmers, the company has begun a process of backward integration via the development of a few farms owned by senior partners in the company. Investments in drip irrigation systems are being made on two farms. Already this year nearly a quarter of the company's thin chillies requirements will be produced on one of these company farms.

Kenya's second largest fruit and vegetable exporter, Makindu Growers and Packers, has also begun to explore non-market solutions to the problems of the Asian-vegetable trade. This firm was mentioned previously. It had actually begun in farming, moving later into strictly export marketing. The firm has relied upon a mix of small- and medium-scale farmers in Matuu, Kibwezi, and Lotokitok for its supplies and has sold to a large number of different importers in the U.K. In 1985 one of the company's senior partners emigrated to the U.K. where he set up an import company. That firm handles distribution of Makindu's products in London. The uncertainties of Asian-vegetable procurement as well as an interest in diversifying into other product lines has led Makindu to begin development of its own farm also.

These patterns of increased vertical integration by two firms, which perhaps have the best reputation in the Asian-vegetable trade, are probably beneficial to the maintenance of Kenya's competitive position in this trade. The present fragmentation of the trade is undermining its long-term viability, but backward integration by exporters into production reduces the scope for smallholder participation in the sector. The rationalization of smallholder Asian-vegetable production does appear necessary. Such a rationalization process should require not only a reduction in the planting of some items, but an improvement in the yields and quality of the planted crop. The fragmentation of the sector virtually assures that output reduction will be achieved only through gradual smallholder disillusionment with an uncertain and unstable marketing system. Neither the private sector nor the official agricultural establishment is willing or presently able to bring about the necessary yield and quality improvements.

The instability and inefficiency of the smallholder Asian-vegetable component has recently attracted government interest with a wide range of possible interventions muted. A 1984 Ministry of Agriculture study on the problems at Matuu made the inevitable recommendations that HCDA be strengthened and that more extension officers be assigned to the area and provided with more technical information about Asian vegetables. Also recommended was that the Matuu Committee should register as an official cooperative, that all farmers should register with that cooperative, and that all exporters should sign binding agreements with the cooperative.(34) Neither farmers nor exporters have shown much enthusiasm for this arrangement and the idea remains floating.

During 1985 and 1986 both the Ministry of Agriculture and the HCDA have made various problem-solving suggestions and proposals for government interventions. Each proposal has sought to introduce controls over one or more dimensions in the trade. For example, one report issued by the Ministry called for the introduction of production quotas for farmers. How such a quota system would be devised, let alone enforced, was not discussed.(35)

HCDA has toyed with a package of policies for implementation in the Asian vegetable sector. Most of its proposals, however, have been targeted on the symptoms of the sector's inefficiencies, rather than the actual causes of these inefficiencies. Little discussion has related to reducing the fragmentation in the export trade, countering the uncontrolled growth and variable quality of production, or improving the provision of technical advice and inputs. The air freight constraint continues. Most proposals have been control-oriented. These policies have been brought up at various meetings between the HCDA, exporters, and farmers, and have generally sailed through as resolutions even though only a minority of participants view them as enforceable (or even desirable).

One issue generally discussed at these meetings is the unscrupulous behavior of "middlemen" acting on behalf of the exporters. Typically, a resolution will be passed stating that there will no longer be middlemen between farmers and exporters. In practice this is impossible as exporters cannot deal directly with each individual smallholder (who may deliver one or a few cartons of produce per day) and even where exporters have set up collection stations, the managers of these stations inevitably take on the characteristics of the dreaded middleman who is able to take advantage of less informed farmers. Most of the "middlemen" are local farmers, not some elusive character lurking in the shadows of night. Without such middlemen, most existing exporters would be hard put to obtain produce from smallholders

on any consistent pattern whatsoever. What weak information flows that do exist between farmers and exporters are largely via the presence of the "middlemen."

A second resolution frequently passed is that each farmer will register with one and only one exporter and each party should sign a written agreement stating terms of exchange. A copy of this agreement should be sent to HCDA. Thus, in the absence of trust, contracts are seen to be an appropriate means of improving production-marketing coordination. Neither most exporters nor many farmers wish to enter into enforceable contracts. Voluntarily drafting such contracts would typically be done in an attempt to "lock-in" the opposite party to future transactions. As both parties are aware that each is likely to default at one time or another, the contract merely represents an illusion of commitment. If exporters were told that they must commit themselves in writing to purchasing specified quantities of produce, then they would simply specify quantities well below their actual requirements and then obtain the balance "unofficially" from noncontracted farmers. A contract-farming system cannot be imposed by government in circumstances where there is a surplus of (uncontrolled) production and where there is a multiplicity of buyers.

The variability of prices among exporters and over time is another issue raised in meetings between the HCDA and farmers. The proposed "solution" is a controlled producer-price system with prices worked out between the HCDA and exporters and then communicated to farmers. Official producer prices would probably be followed initially, but the structures of production and export marketing would soon result in the reintroduction of variations. Otherwise, farmers with top quality produce and consistent supplies would obtain the same prices as farmers producing mixed-quality produce on a sporadic basis. Official producer prices would probably not be flexible enough to enable adjustments to short-term supply and demand changes. The reduction of price uncertainties would probably lead to accentuated seasonal gluts and farmers would welcome access to buyers at below the official price.

Concluding Remarks

This report examined several features of a complex production and marketing system. The analysis began by examining the demand and distribution of Asian vegetables in the U.K. and traced back the marketing channels through to the production stage in Kenya. Particular emphasis was given to the structure and constraints of the export trade and the poor level of coordination between production and export marketing. The report went on to analyze a contract farming scheme implemented by one of Kenya's leading horticultural exporters in the early 1980s. While the project did contribute to a major expansion in Asian-vegetable production among smallholders, market forces made contractual enforcement impossible and the contracting company progressively lost control over the crop.

Competitive forces abroad and the changing business strategies of several exporters appear to dictate a rationalization of smallholder Asian-vegetable production. Farmers are not in a position to guide this process collectively and are thus vulnerable to both the vagaries of the market and the uncertain effects of piece-meal government interventions. The government has concentrated its attention on monitoring exporter behavior and has not laid down the institutional machinery to support farmers. The export trade is fragmented and largely unprofessional. Greater coordination between production and marketing appears elusive, and the Kenyan export trade in Asian vegetables will decline.

Notes

1. Miller (1971) pp. 396-98; Interview with Mr. Omii Bij of Makindu Growers and Packers, October 10, 1986.
2. Tandon and Raphael (1984), p. 4; Robinson (1986), p. 40.
3. This information was provided by several London-based Asian-vegetable importers interviewed December 1984 to February 1985 and November 1986.
4. OPCS, 1982 Population Trends.
5. OPCS, Birth Statistics 1983.
6. The Immigrant Statistics Unit (1979) as reported in Robinson, p. 36.
7. Central Statistical Office (1985); Anwar (1979).
8. Aldrich et al. (1984); Robinson (1986).
9. N.O.P. Market Research Ltd. (1974); Hunt (1975); Key Note (1986).
10. As reported in Wilson (1977).
11. Key Note (1986), p. 9.
12. Jones (1978), as mentioned in Robinson (1986), p. 29.
13. Jones (1983).
14. For a more detailed examination of these features see Jaffee (1986a).
15. Aldrich et al. (1984), p. 199.
16. Ward (1983).
17. This is the general argument put forth by Aldrich et al. (1981; 1984).
18. Loughborough (1984); personal communications.
19. Based on interviews with importers.
20. See Jaffee (1986b) for a more detailed discussion.

21. The difficulties of accomplishing this "transfer" and suggestions of potentially more efficient methods of increasing African participation in export marketing are discussed in Jaffee (1986b).

22. A British team advising the Kenyan Government in the late 1960s predicted that the trade in Asian vegetables would level off at around the volume reached in 1969 and would subsequently decline. The prediction was based on the assumption that there would be no major population increase within the U.K. Asian community and that consumption patterns among this community would shift away from traditional foods.

23. Several short periods of rapid growth or decline can be linked to institutional changes. Particularly significant trade growth took place over two subperiods: 1972-74 and 1981-83. It was during the first subperiod when a partner in Kenya's biggest export company emigrated to the U.K. and started an import/distributing company. During the second growth subperiod, a U.K. firm dealing primarily in Kenyan produce embarked on a major expansion program via investments in storage and transport and making deliveries to several cities. The 1984 downturn in the trade may be partly accounted for by the bankruptcy of this latter firm, the resulting increased fragmentation of the trade in the U.K., and the financial losses borne by Kenyan exporters dealing with this firm.

24. It is likely that Kenyan export data for aubergine are inaccurate. In recent years there has been a considerable decline in U.K. importer interest in the Kenyan aubergine with the greater availability of European aubergine supplies. Such a decline in demand is not reflected in the trade data. One explanation may be that some exporters are falsely declaring other produce as "aubergine" since aubergine have a lower f.o.b. value than other vegetables, and making such declarations would reduce the foreign currency values that would have to be repatriated to the Kenyan Central Bank.

25. Thuo and Horrman (1979), p. 8.

26. See the sections on the structure of the horticultural trade in Jaffee (1986b).

27. Crop budgets made by Kenya Horticultural Exporters Ltd., 1986.

28. Based on interviews with exporters, government extension workers, cooperative officials, local agents, and farmers in September 1985 and October 1986.

29. One notice seen in October 1986 read "Kindly stop the harvesting of aubergine. Sorry for any inconvenience."
30. Ministry of Agriculture (1974), p. 14.
31. Ibid., op cit.
32. Wekundah (1985), p. 2; Farmer interviews.
33. Based primarily on interviews held with Atul Dhanani and other senior staff of KHE.
34. Wekundah (1984).
35. Machokos District 1985 Horticultural Annual Report.

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**CONTRACT FARMING, MARKET CONDITIONS, AND THE VEGETABLE
DEHYDRATION INDUSTRY IN KENYA, 1964-1982**

Introduction

The vegetable dehydration industry is the first case in Kenya where small-scale African farmers became a party to written production contracts with an agricultural processing firm, but this smallholder contracting component was perhaps the only successful dimension of a project that spanned two decades and featured numerous changes in ownership, management, and operating strategy. Severe problems were faced in largeholder and nucleus-estate raw material procurement, in processing and in marketing. While initiated in 1964 largely for the social benefit of improving the welfare of newly settled African smallholders in the former "White Highlands," the project never succeeded in making a transition into an economically viable venture. Government subsidies, foreign investment, and multinational marketing were all marshalled to put the project on a sound commercial basis but low levels of operational efficiency and adverse changes in market conditions (both local and international) led the project into a financial abyss.

Little has been written on the project and few publicly available documents provide any information about the participants, organization, or performance of the project. (1) The information presented in this study has been drawn primarily from a selected number of government documents and from sections of company records. I have also relied on information provided by the former agricultural manager of the project. Information about the world market for dehydrated vegetables was obtained from secondary sources.

This study provides only an initial overview of the project's development, market environment, internal structure, and performance. Many important dimensions of the project warrant further study. A fuller understanding of the microeconomics of the project as well as the institutional linkages among participants would require a more thorough review of company records and a wider range of interviews with project participants than was possible in the course of this research.

We begin by discussing general features of dehydrated vegetables and their international market. We then provide an overview of the foundation and the early performance of the Kenyan dehydration industry. This covers the period from 1964 to 1972 when the industry was oriented primarily toward providing a market outlet for small-scale farmers, but was not economically sustainable because of its limited operating scale as well as its management and marketing problems. In the early 1970s a plan was developed to expand the industry and to link it to an international expert in the field. We examine the new project

concept and its main participants. We then move on to the core of the study: an examination of the organization and performance of the industry over the 1975 to 1982 period. We discuss the international market environment in which the new project was set and explore the marketing, processing, and raw material procurement problems that were faced by the new project. In discussing the raw material supply problem, we contrast the relatively successful smallholder-farmer contract farming scheme with the problematic sourcing of supplies from large-scale farms and company estates. We then provide a few concluding comments and raise a series of questions for further research.

Dehydrated Vegetables

Dehydrated vegetables have been produced in small quantities since the 19th century. The product was used by British naval expeditions in the mid-19th century and by both soldiers and civilian populations during subsequent wars. Advances in processing technologies after World War II brought significant improvements in the quality of dehydrated vegetables.(2) The demand for convenience foods began to grow in the 1950s and accelerated in the following two decades. The dehydrated vegetable industry would benefit from this growing demand for convenience foods.

Dehydrated vegetables are less bulky and lighter in weight than fresh or other processed vegetables. They are cheaper to pack than canned vegetables and do not require refrigeration as do frozen vegetables. Dehydrated vegetables have a long shelf life, extending several years for some items.(3)

The major use for dehydrated vegetables is in the manufacture of dried (or packet) soups. The demand for dehydrated vegetables is thus a derived demand, based on production and consumption of (primarily packaged) soups. Secondary uses of dehydrated vegetables are in baby food, canned soups and stews, and a variety of ready-made meals. Seventy-five percent of West European imports of dehydrated vegetables are supplied to soup manufacturers. A further 20 percent is supplied to the catering sector and to institutions (i.e., hospitals and schools). The remainder is used by general food manufacturers or sold directly to consumers as dehydrated vegetables.(4)

In most Western European countries the domestic production of dehydrated vegetables reached a peak sometime in the 1960s or early 1970s and declined thereafter as a consequence of rising raw material and labor costs. In some countries a small number of large and diversified firms have continued to produce smaller quantities of high-value, high-quality dehydrated vegetable

items. Consumer and manufacturer demand has been met largely by increased imports from Eastern Europe, the Mediterranean, and Asia. A large number of countries, both industrialized and developing, now supply the West European market, and competition is heavy both in terms of quality and price. Price fluctuations are common owing to changes in supply and/or demand conditions.(5) Transport costs play a relatively insignificant role in the relative competitiveness of different countries. Dehydrated vegetables are sent by sea freight, and transport costs tend to be 10-15 percent of import costs.

In most supplying countries vegetables for dehydration are grown almost exclusively on contract for processors with contracts stipulating acreage, planting periods, varieties, stage of maturity at harvest, delivery dates, grading, and prices. It is generally considered that required continuity as well as varietal specificity of raw material cannot be assured by buying on the fresh market.(6)

The world dried-soup industry is dominated by three firms--Unilever, Nestle, and Knorr (CPC Intl). These firms hold a preponderant market share in nearly all Western European countries. As the main users of dehydrated vegetables these firms have strongly influenced the standard trading practices in the industry. These firms have set high quality standards for their suppliers in terms of cut, color, moisture content, bacteria level, flavor, and rehydration time. Historically, price has been a secondary factor after quality in supplying raw materials to this market sector. The soup manufacturers have generally preferred not to purchase directly from overseas producers, but instead buy from well recognized importers who have the capacity to test, reprocess, regrade, and repack supplies. Developing-country exporters thus tend to deal with brokers or importer/packers rather than directly with soup manufacturers.

In contrast to the soup sector, for buyers serving the catering/institutional sector, price is a major consideration and quality standards are set lower. Standards set by baby food manufacturers are the highest, but supplies fetch a considerable price premium. This sector is small in volume relative to the former two.(7)

Vegetable Dehydration in Kenya

1964-1972 Subsidized Trial and Error

Foundation

In 1964, less than a year after an initial investment proposal was submitted, Pan African Produce and Development Company started dehydrating vegetables at a small Naivasha factory. The factory had a capacity of producing 450 tons of finished product annually. The company's main sponsor and shareholder was Biddle and Sawyer Company, a London-based firm that had been prominent in the marketing of Kenyan pyrethrum. With Kenyan Government approval, also investing in the project was the Development Finance Company of Kenya (DFC). Minor shares were held by a few other private parties.

The main reason for the Government's interest in the project was the creation of an outlet for the vegetables produced by the small-scale farmers who were settling near Lake Naivasha and in Nyandarua District (i.e., the Kinangop Plateau) under the One Million Acre settlement scheme. At Kenyan independence large European farms in the highlands were purchased by the Government with British financing. Settlement schemes were developed to allocate land to smallholders and landless Africans. Seventeen settlement schemes, each with a size varying from 10,000 to 18,000 acres, were established. African settler families were provided with plots of 20 to 60 acres, although generally only 5-10 acres of each plot were arable. With the backing of the Ministry of Lands and Settlement, each settlement scheme was to develop its own cooperative with its own administration, technical equipment, workshop, and agricultural advisor. Farmer membership in these cooperatives would be mandatory. (8)

As originally conceived, the project would combine private and public interests in a production scheme that theoretically would not only generate export earnings and improve the welfare of newly settled smallholder farmers, but would also assist in developing the country's cooperative movement. In theory the DFC shareholding was being held in trust for the grower cooperatives, which after accumulating a sufficient surplus, would purchase these shares on behalf of their farmers.

Outgrower Contracts

As noted above, Kenyan Government support for the project rested largely on the expected benefits that would accrue to the settlement farmers. Most of the land held by these farmers was

kept under permanent pasture to support their livestock. Milk, sold through the settlement cooperatives, would become these farmer's main source of income. Arable land was used to produce maize, potatoes, and other vegetables. Carrots grew particularly well in the Kinangop area. The farmers faced problems marketing their produce as the road network in the Kinangop was poor and Nairobi traders had easier access to vegetable-growing areas nearer to the capital.

The dehydration company decided to base its raw-material procurement system on production contracts with farmers. Since it was felt that contracting directly with newly settled farmers would be administratively difficult and financially risky, the company decided to enter into written contracts with the settlement cooperatives. The cooperatives would act as "channeling funnels" for inputs and technical assistance and as units for production planning. It was further felt that the cooperatives would be well placed to assist in contract enforcement and debt collection, since they would also be marketing the farmers' milk and, if necessary, deductions could be taken from payments for this commodity.(9) We examine these production contracts in a later section.

The company's procurement of raw material incorporated two other groups of farmers. One group consisted of people working in the afforestation schemes of the Ministry of Natural Resources. Workers employed on these schemes to clear bush were permitted to utilize space between tree rows for agricultural purposes. Each worker had access up to 7.5 acres. Four forest stations would serve as the intermediary between these farmers and the company.(10) Both the settlement farmers and the forest station workers were initially contracted to grow primarily carrots for the factory.

Large-scale European farmers operating around Lake Naivasha comprised the third group to benefit from the project. Some of these farmers had begun growing vegetables in the 1940s, initially growing potatoes and onions for local sale and later starting to grow capsicums and French beans under irrigation for fresh export to Europe.(11) Growing vegetables for the factory was a useful supplement to these other activities and helped defray the high initial investment that these farmers were then making in infrastructure and irrigation systems. Farmers were particularly interested in growing for the factory during the export off-season. With these larger farmers written contracts were rare. The provision of seed by the company, and the farmer's commitment to provide his output to the factory, were based on trust. These farmers would concentrate on specialist crops such as French beans and capsicums. Producer prices would

be collectively negotiated based on agreed estimates of production costs. (12)

Erratic Performance

The project was supported largely on social and political grounds, rather than on commercial grounds. The private investors viewed the investment as a pilot project to examine the technical and market prospects for a larger venture. They had no technical expertise in the field and the managers appointed to run the factory had no experience with dehydrating vegetables. Machinery and equipment were purchased from several sources, some local and some foreign. Some machinery was badly designed or not in full working order. As an assessment of raw-material procurement potential had not been made, it is not surprising that some of the equipment purchased was for use in processing vegetables that could not be procured economically in the Kinangop area. (13)

The project sputtered along for four years making continuous losses. A management overhaul in 1966 had only a minor effect on performance. It was becoming obvious that the factory's very small capacity made the entire operation uneconomical. Overheads were swallowing sales earnings. The factory was only operating at less than 50 percent of its small capacity in several years. The company was exporting small quantities of low quality carrot powder to the United Kingdom. Exports marketing was ad hoc, involving little preplanning or long-term contracting. European manufacturerers would not enter into longer-term trade arrangements because of the uncertainty of supply and quality associated with the Kenyan product. The annual export levels were the following: 1965--102 tons; 1966--117 tons, and 1967--217 tons. These export volumes, combined with the low prices that the Kenyan product could fetch, led to continued financial losses. In March of 1968 the company went into receivership. Later that year the factory was purchased by the Kenyan Government and renamed Pan African Foods (1968). The government wished to prevent the closure of the factory with its subsequent adverse effects on the contracted farmers.

Following the government's purchase of the factory several adjustments were made that improved some aspects of the company's performance. Additional machinery was added to the factory to bring its capacity up to 600 tons of finished product per year. It was also decided that the factory's raw material intake required greater diversification. Smallholder production had concentrated on carrots, and this item formed most of the factory's supplies. This contributed to financial problems as carrots generate a lower profit margin and lower unit sales

earnings than vegetables such as green beans, capsicums, and onions. To increase commercial viability the company would have to put greater emphasis on procuring the higher-value vegetables. This raw material diversification would require greater reliance on the Naivasha farmers. The Kinangop area features low temperatures at night plus clouds and high humidity in the early morning. Thus, crops such as onions or beans which have high photoperiod sensitivity do not grow well there.(14) Smallholders would be encouraged to grow more leeks and cabbages.

Some success was made in diversifying raw material supplies. While in 1970 eighty-two percent of the weight of raw materials processed consisted of carrots, by 1972 the share of carrots was down to sixty-seven percent. The company had succeeded in increasing smallholder supplies of leeks and cabbages and large-farm supplies of capsicum, beetroot, and French beans.(15) Total raw material supplies by the Naivasha growers were, however, showing signs of instability by the early 1970s. Large-farmer supplies to the factory fell from 4306 tons in 1970 to 2971 tons in 1971 and down to 1960 tons in 1972. Many large farmers were becoming more actively involved in the fresh export trade, adding crops such as courgette to the initial basket of French beans and capsicum. Exports of fresh capsicums to Europe increased four-fold between 1969 and 1972. Another outlet, that of the Nairobi greengrocer serving a higher income clientele, also grew in size and paid prices above those of the factory.(16)

Performance in the smallholder component was more favorable. Cooperative vegetable supplies to the factory more than doubled from 2304 tons in 1970 to 5234 tons in 1972. This occurred despite the fact that by 1970 the Ministry of Lands and Settlement had lost interest in the project and no longer wanted the project justified on the basis of the social benefits accruing to newly settled farmers. Initially the settlement schemes had been underfinanced and lacked effective institutional structures to channel the needed finance, equipment, and technical assistance to the farmers. The Pan African Foods project thus required the support of the local Ministry of Lands and Settlement officials to get the cooperatives sufficiently organized to perform project-related functions. Cooperative staff had been both meagre and unqualified. However, by the time the Ministry withdrew its support the cooperatives had built up their own staffs. While some cooperative management problems did arise it does not appear that these problems were nearly as debilitating as those facing horticultural cooperatives elsewhere in Kenya. Sometimes payments to farmers were delayed until cooperative bills were paid and sometimes limited quantities of inputs did "disappear." Still, overall cooperative performance was adequate.

Trading performance over the 1968-1972 period was varied, although better than during the earlier years of the project.(17) Exports varied from year to year with the project being adversely affected by drought in the Kinangop during both 1969 and 1971 and by heavy rains during 1970 which resulted in extremely high moisture content in carrots. Export levels were the following: 1968--595 tons; 1969--450 tons; 1971--297 tons, and 1972--572 tons. In 1968 the company diversified its sales into the West German market, and by the early 1970s this was the company's largest market.

While the quality of the factory's product did improve over earlier years, Kenyan sales were still at lower prices than other major suppliers. Kenyan supplies were largely being sold as second quality to the catering/institutional sector as bacteria count was higher than the limits set by the soup manufacturers.(18) Obtaining long-term contracts thus remained difficult. Quality control problems reduced the prices the company could obtain. Some indication of the magnitude of these quality-related price discounts can be seen in the following figures:

West German Import Prices for Carrots
(\$ per ton)

Year	Average (All countries)	Kenya
1969	817	701
1970	821	795
1971	757	730

Source: ITC 1972 (19)

From 1968 to 1972 the company operated in the red. In most years the factory was provided with an annual government subsidy of 20,000 pounds (\$56,000) in order to cover its expenses.

1973-1974: Enter the Experts

A 1970 government working party examining the condition of the horticultural sector argued that since its establishment the vegetable dehydration project had been operating on an ad hoc basis, never developing a sound, long-term plan to develop the industry and never adequately utilizing experts in this product field. The group recommended that the government enter into a

joint-venture project with a major European or American firm that would provide finance, technical know-how, and established distribution outlets. After several aborted contacts, the government finally agreed to a proposal made in 1973.(20)

The new project would entail majority government control through the shareholding of the Industrial and Commercial Development Corporation and a minority shareholding by Sifida Investment Company (Swiss), Bruckner Werke (W. Germany), Barclays Overseas Development Corporation (U.K.), and several other shareholders. The new project would involve \$3.5 million of new investment in the form of equity and debt. A new factory would be built near the old factory site. It would have a capacity to produce 3000 tons of dehydrated vegetables annually.

The central participant in the project would be Bruckner Werke. Bruckner has been the largest producer of dehydrated vegetables and potatoes in West Germany and has a major share of that country's imports and exports of dehydrated vegetables. Bruckner would be responsible for obtaining and installing the machinery for the new factory. Also, in coordination with company management, Bruckner would determine an annual program for raw-material supply to the factory and a processing plan which would result in a product mix and volume of supplies sufficient to meet sales contracts. Bruckner would provide technical assistance related to raw material production as well as processing and packing methods. Finally, Bruckner would have exclusive overseas marketing rights to the Kenyan company's output. Any local or foreign sales that the company wished to make on its own would require the approval of both Bruckner and SIFIDA.

At full operation four years into the project, the company expected to be producing 2560 tons of dehydrated vegetables using nearly 33,000 tons of raw material. According to the production plan, output and raw material sourcing would be as follows:

Product	Planned Output (Dehydrated Product)	Procurement	
		Large Farms	Smallholders
Carrot	975 tons	25%	75%
Onions	570	100	
Leeks	400	50	50
Peppers	250	100	
Beans	200	100	
Cabbage	125	75	25
Beetroot	45	50	50
Tomatoes	45	100	

Source: SIFIDA

Using company estimates for yields and required acreages, one finds that the investment plan called for raw material supplies from large farms of 20,115 tons (62 percent) while supplies from smallholders would be 12,670 tons (38 percent). This would represent a doubling of smallholder deliveries and a ten-fold increase in large farm deliveries over the actual 1972 levels. Considering differential values for the various crops, approximately 3/4 of farm-level income would accrue to the large farmers under this plan.

While acknowledging that irrigation costs require large farmers to plant crops bringing maximum revenues and while noting the increased interest in producing vegetables for export, the foreign investors were confident that raw material requirements could be met: "No serious difficulties are foreseen to increase the present production of fresh vegetables (8000 tons p.a.) to the quantity needed for the new factory (33000 tons in 1977) . . ." (SIFIDA, p.2) There was thus considerable optimism about the potential to increase raw material in-take to meet the new factory's large capacity.

There was also considerable optimism felt about marketing prospects. Past trends led the company to believe that West European demand would continue to rise at a steady 5 percent per year. For the three largest markets--West Germany, the U.K., and the Netherlands--combined imports of dehydrated vegetables more than doubled from 1965 to 1970 from 16,102 tons to 35,566 tons. Growth in imports had been steady year-by-year as domestic production of dehydrated vegetables declined in several countries.(21) For example, West German production of dehydrated vegetables actually peaked in 1963, declining thereafter. The market for dried soups continued to grow at a fast pace. Because of the low capacity of its factory, Pan African Foods had not

been able to take advantage of the expanding European market during the 1960s and early 1970s.

The investment proposal appeared to provide solutions to the project's existing problems and considerable confidence in expanding the industry. Commercial viability would be guaranteed by the expansion of capacity, by the increased emphasis on higher value products, and by the participation of a firm with technical expertise and excellent marketing skills and contacts. While the relative importance of large farms for raw material supplies would be increased, the company's plan included an expectation of expanding smallholder deliveries, thus increasing income flows into the settlement schemes.

The joint venture investment was approved by the Government. It represented for several parties a risk-reducing effort. For Bruckner Werke the project represented an opportunity to diversify its sources of dehydrated vegetables and thus reduce the risk of shortfalls from its other suppliers. The company's minor equity holding did not represent a substantial investment and even this was off-set by earnings associated with the procurement and installment of the new plant and equipment. The new initiative also enabled various government officials to reduce their political and institutional risk, as now the project had incorporated "international experts." One of the roles of these experts would be to relieve certain officials of decision-making responsibilities over issues for which they lacked training and experience.

1975-1982 Pan African Vegetable Products, Ltd.

The new company began operations in 1975. It was composed of two legal entities. One was the holding company Pan African Vegetable Products (PVP) whose purpose was to process and market dehydrated vegetables. The second was a wholly-owned subsidiary called Pan African Vegetable Products Estates, which was to manage nucleus farms and supply fresh vegetables to the holding company.

From the beginning, the company's performance trailed behind the expectations of both the Government and the private partners. Even with its expanded capacity and virtually guaranteed market access, the company was never able to earn an annual net profit. Financial losses accumulated year-by-year and frequent government subsidies were required to keep the company operating. The company experienced severe problems in raw material procurement, in processing, and in marketing, and continued financial losses fed back to magnify the problems in each of these areas.

The financial picture of the company was dismal from the start. The quadrupling of oil prices in the mid-1970s considerably increased production costs. Fuel oil would be the prime source of energy for the factory, used to generate the hot-air process for dehydration. Less than one year into the project it was estimated that even if the factory were operating at full capacity, the increased costs would result in an operating profit only 35 percent of that originally forecast in the feasibility study.(22) In fact, the factory never even came close to operating at full capacity. Maximum capacity utilization was reached in 1977 at approximately 70 percent and annual capacity utilization averaged just over 50 percent.

Financial losses were generally in the range of Ksh 2-5 million per year. Accumulated losses reached Ksh 22.8 million in 1979 and Ksh 45 million in 1982. Working capital was also a problem. In 1977 and 1978 the Ministry of Agriculture and the Treasury provided Ksh 4 million. As accumulated losses absorbed all finance, the company's situation was considered irreversible as early as 1978. In that year the company began defaulting in its repayment of overseas loans. It kept operating by delaying payments for inputs and raw materials, by a limited injection of fresh (government) equity, and by making full use of an overdraft facility. By 1980 the company's bankers were refusing to honor its checks. In 1982 PVP went into receivership.(23)

Despite its overall poor financial performance, PVP did have considerable developmental impact. In the late 1970s it earned an average of Ksh 11.5 million per year in foreign exchange. Also, it became the second largest employer at Naivasha with a combined labor force in its factory and on its estates of 1600 people. Furthermore, the company provided a valuable source of income for up to 3000 smallholder farming families.

We begin our review of PVP by first examining the general market environment in which it operated in the late 1970s. We then go on to examine PVP's marketing, processing, and raw material procurement problems.

Market Stagnation

Pan African Vegetable Products started operations at a time when Western Europe was in the midst of an economic recession. The recession had been brought on partly by the quadrupling of oil prices after 1973. Economic rates of growth were declining and consumer demand for numerous items was down. Both the production and consumption of soup declined in several countries. Between 1973 and 1975, the production of canned and packet soup

in West Germany declined from 98,200 tons to 81,000 tons.(24)
 The dehydrated vegetable industry suffered as a consequence.
 Compare below the imports of several countries for the year 1970
 with those for 1975 in the midst of the recession:

Effect of Recession on Dehydrated Vegetable Imports
 (Figures are Tons per Year)

Year	W. Germany	U.Kingdom	Netherlands	Total
1970	13271	15574	6721	35,566
1975	11330	11870	6191	29,371

Sources: ITC 1972; 1981

Even with economic recovery in the latter half of the 1970s, the market for dehydrated vegetables remained stagnant. The combined imports for West Germany, the U.K., and the Netherlands for 1978 was only 34,613 tons, a level below that for 1970.

Through its marketing agreement with Bruckner Werke, PVP would be exporting most of its finished product to West Germany. It is significant to note that West German production of packet soups actually declined over much of the 1970s. This can be seen in the data below:

West German Packet Soup Production (tons '000)

1971	42.1
1973	43.4
1975	39.0
1978	39.1
1979	36.5
1980	37.3

Sources: Marketing In Europe, April 1976; July 1984

The D-Mark value of production was no higher in 1979 than it was at the beginning of the decade. This pattern was not limited to West Germany. For example, consumption of packet soups also declined in the Netherlands in the late 1970s, falling from 156 million liters in 1977 to 129 million liters in 1979.(25)

The mid- to late-1970s was a period not only of fluctuating and/or declining demand for soups and dehydrated vegetables in Western Europe, but it was also a period when the countries of Eastern Europe as well as Egypt, China, Taiwan, and Morocco were increasing their supplies of dehydrated vegetables onto the market. Price competition thus tightened. Several countries heavily subsidized their dehydrated vegetable industries or used this product in barter or compensation deals.(26)

As a result of stagnant demand and increased market penetration by several suppliers, overall market prices exhibited no nominal increase over the course of the 1970s. Compare, for example, the ex-factory prices in West Germany for several dehydrated vegetables that Kenya also supplied to that market:

Ex-Factory Prices in West Germany

Product	Price (DM/Kg.)	
	1970	1980
Carrots (cubes/flakes)	4.40-5.40	4.00-4.50
Carrots (powder)	4.20	2.50
Leek, white(slices)	5.70-6.00	5.70-6.00
Leek, white-green(slices)	5.00-5.30	4.00-5.50
Beetroot (powder)	7.70	4.50

Source: ITC 1981

With the exception of beans, the import prices in West Germany for items that Kenya also exported do not show a pattern of increase in the late 1970s which would have compensated for increased production costs arising from higher energy costs. This can be seen in the figures below:

West German Average Import Prices (DM/Kg.)

Product	1975	1976	1977	1978	1979
Carrots	3.79	3.72	3.83	4.02	3.16
Leeks	3.96	3.69	4.31	3.98	4.23
Beans	5.54	5.86	7.95	7.92	7.20
Onions	3.36	3.25	3.79	3.64	3.27

Source: Calculated from data in ITC 1981(27)

The Marketing of PVP's Products

Was the stagnant position of the West European dehydrated vegetable market the prime cause of the company's financial problems and ultimate demise? Did the company's tied marketing arrangements with Bruckner Werke contribute to lower returns from exports? The evidence suggests that neither the overall market situation nor the company's marketing arrangements were major contributors to the problem.

Before examining PVP's marketing problems, let us first examine PVP's performance in terms of export volumes and sales. At full operating capacity the company had expected to produce 2560 tons of finished product per year. As we can see in the following figures, its maximum export level was only 53 percent of this figure, reached in 1976.

Kenyan Exports of Dehydrated Vegetables

Year	Quantity (Tons)	Value (Ksh Million)
1975	479	4.08
1976	1362	15.34
1977	1326	17.70
1978	949	18.75
1979	1340	23.81
1980	1044	18.30
1981	832	13.47
1982	385	6.97

Source: Kenya Annual Trade Reports

During this period, between 60 percent and 80 percent of exports went to West Germany, with the remainder going to the U.K. and the Netherlands. By 1979 Kenya had become the leading supplier of dehydrated carrots, leeks, and beans to West Germany.

In the original marketing agreement with Bruckner Werke, the latter would be responsible for all overseas marketing of PVP's products. Marketing had proven to be a major problem of the earlier dehydration company, and it was felt that Bruckner could guarantee PVP market access and obtain for it favorable prices. The exclusive marketing agreement held in force until December 31, 1977. Although a number of draft agreements were drawn up in 1978, no new marketing contract was signed. From that point

onward the parties operated on a quasi-contractual basis, sometimes wishing to enforce the terms of the original agreement while at other times seeking alternative arrangements.(28)

From the beginning the marketing links between PVP and Bruckner were an arena of conflict, distrust, and dismay. PVP management felt that Bruckner was paying insufficient prices, that Bruckner was not providing management with sufficient market information, and that under the prevailing marketing arrangements several potentially promising distribution outlets were not being properly developed. Bruckner was disturbed by the factory's inability to maintain high quality standards and by PVP's inability to produce according to production plans. Complicating the marketing situation was the fact that Bruckner was also a shareholder in PVP and had major input into production-related decisions.

From as early as 1976, PVP managers were becoming concerned about the marketing arrangements with Bruckner. PVP had little understanding of the market and was dependent upon Bruckner to provide all market information. Bruckner was unlikely to pass on information that would improve PVP's bargaining position as regards pricing. Thus, only scanty market price information was provided.(29) PVP's information on its own production costs was not very reliable and subject to "editing" by Bruckner. Thus, Bruckner was virtually able to dictate prices. In addition, many PVP shipments were sent direct to end-users without Bruckner taking possession at all. PVP was obtaining enquiries from some of these end-users. This signaled to the management that PVP could perhaps by-pass the "middleman" (i.e., Bruckner) and obtain better prices. PVP management was also suspicious that Bruckner was tailoring the product mix to suit its own sourcing requirements rather than emphasizing a mix that would obtain the best sales return for PVP.(30)

In December 1976, PVP management examined the pattern of its selling prices to Bruckner up until that time. It found that there had been slight price increases for a few items, but that the price levels for most items were below those predicted in the earlier feasibility study. Still, management did not know whether this was due to the depressed market or due to the Bruckner monopsony on PVP's products. A year later the PVP management gained access to data from the International Trade Center that compared 1976 and 1977 import prices into West Germany and the Netherlands for Kenyan dehydrated vegetables and for these products from other sources. While the results were somewhat mixed, they did show that in 1977 Kenyan leeks, beans, and potatoes were obtaining lower prices than alternative suppliers. Was Bruckner paying "too low" a price? PVP management thought so and put in a claim to Bruckner for D-Marks

293,343. With the original marketing agreement approaching its end-date of December 31, 1977, various attempts were made to draft a renewal contract containing revisions in certain clauses. None of these revised agreements were actually brought into practice, but it is interesting to note some of the proposed changes. For example, it was proposed that the proportion of output going to Bruckner be progressively reduced to 50 percent. It was also proposed that Bruckner's payment be within 30 rather than 60 days in order to improve PVP's cash flow position. Further, it proposed that contract prices be "comparable to world prices." The most interesting proposal was that PVP would develop its own sales unit for direct sales both locally and abroad and that "to enhance direct marketing the company will negotiate for a share of the markets where Bruckner Werke is already represented." (31)

In the late 1970s PVP did increase its level of sales on the local Kenyan market and did begin to make sales direct to several European companies other than Bruckner. The prices obtained on the local market were considerably higher than those offered by Bruckner, converted into Kenyan shillings. Several of the orders made by European companies were also at prices above those offered by Bruckner. However, when PVP sent a delegation to Europe to inquire about the scope for expanding these direct sales, Bruckner threatened to cease its involvement in PVP product distribution altogether.

What was Bruckner's perspective on its marketing links with PVP? Bruckner's marketing strategy was based primarily on long-term (i.e., annual) contracts with major food manufacturers and institutional buyers. Based on buyer requests and the production possibilities in Kenya, Bruckner and PVP were to develop a production plan for the factory and shipping schedule. The PVP operation served as one of many sources for the company and thus the planned product mix for each year would reflect Bruckner's expectations of supplies from other sources. It would be difficult to argue, however, that PVP's product mix was dictated by the wishes of Bruckner alone. Bruckner's largest orders were for the lower value carrots, cabbages, and leeks. These had unit values only 1/2 to 2/3 those of beans or capsicums. Carrots remained PVP's main item accounting for 60 percent of exports in the late 1970s. However, this proportion is actually lower than the share of carrots in Kenya's exports a decade earlier before Bruckner was involved. Bruckner found that PVP consistently operated far behind schedule on contracted deliveries for beans, leeks, and capsicums, and that Bruckner itself was unable to fulfill its contracts with the customers. Bruckner contended that it was inappropriate simply to examine official import statistics in order to compare supply prices. It responded to PVP's price discount claim by pointing out a number of

extenuating circumstances that had influenced the annual "average" import prices in West Germany and the Netherlands during the years for which the PVP claims applied, and provided evidence that PVP was generally receiving prices above average world prices.(32)

Bruckner's critical concerns related to the quality and reliability of PVP products. For many sales, particularly those destined for customers outside of West Germany, products would be sent directly by PVP to the customers without Bruckner inspecting the consignment. For at least four major consignments during 1975 and 1976 either the customer rejected the lot outright or demanded a price reduction from Bruckner. On these and other occasions Bruckner was forced to ship consignments to its own factory for testing, reprocessing, and repacking. Sometimes the material could only be sold to producers of dog food or to chemical companies. Bruckner's customers complained that PVP supplies sometimes had high bacteria counts, high levels of SO₂, contained foreign matter, had vegetables of the wrong cut, or contained rotten material.(33)

Delayed deliveries were said to have resulted in cancelled sales contracts for Bruckner. On some occasions the customers went on to buy elsewhere to cover their requirements and paid higher prices. Bruckner would then receive the invoice for the price difference.(34)

On at least two occasions, Bruckner placed claims against PVP to compensate them for the costs associated with problems in quality or delay. The first claim was made in 1977 for documented cases during 1975 and 1976. The value of the claim was DM 105,065, equivalent to about 1.3 percent of PVP foreign-sales revenues. Several later claims were of perhaps questionable authenticity. For example, in 1978 PVP's financial manager transferred to Bruckner the sum of Ksh 406,686 against compensation for undergraded products. The products were neither returned nor certified by an independent statutory body as being "disposed of." In addition, a clause in the marketing contract stipulated that payments should be made after 60 days of receipt and that any money paid by Bruckner prior to 60 days be treated as an "advance payment," subject to interest. Even though the marketing contract officially lapsed in 1977, over the 1978-80 period Bruckner debited PVP the sum of Ksh 635,329 for such interest payments.(35)

Clearly PVP's marketing position was not optimal. At certain times better prices could have been obtained if the company had bypassed Bruckner and sold directly to end-users. PVP was certainly not obtaining full market information from Bruckner and thus did not know about a number of short-term

opportunities. Clearly, the exclusive marketing arrangement limited the scope for Kenyans to learn about the market and develop marketing expertise. PVP was thus extremely vulnerable to strains in its trading relationship with Bruckner as PVP lacked a credible threat of sending most of its supplies to Bruckner's competitors or customers.

However, what Bruckner did provide PVP was guaranteed market access. In the increasingly competitive but stagnant market of the late 1970s, it is not at all clear that PVP would have been able to act independently and supply the volumes that it did. Things might have been different if PVP was supplying consistently high quality products on a reliable scheduling basis. The fact that quality and reliability were indeed major problems made the link with Bruckner (or a similar type of firm) absolutely necessary. It is certainly not clear that Bruckner was paying PVP prices that were "too low." A review of Bruckner's contracts with its customers over the 1976-1978 period revealed wide variations in the firm's selling margins, but certainly not a general pattern of sensational profits. For sales contracts for carrots and beans Bruckner's margins varied between 1 percent and 11 percent with the higher margins being associated with lower volume sales.(36) Bruckner had little incentive to "bleed" PVP since the latter had developed into an important supply source for several items.

PVP's Processing Problems

Throughout the life of the project the factory operated at well under its full capacity. Annual capacity for raw material in-take was 33,000 tons. We can see in the figures below that low rates of capacity utilization prevailed.

Factory Capacity Utilization

	Tons/yr (rounded)	% Utilization
1976	21,000	64
1977	22,000	70
1978	19,000	58
1979	20,000	61
1980	13,000	40
1981	11,000	33
	-----	-----
Average	17,700	54

Operational inefficiencies at the factory also contributed to the poor financial performance of the overall operation. Important inefficiencies were related to poor conversion rates for raw material into finished product and poor quality control. The quantitative significance of these factors can not be assessed since the factory lacked a cost-accounting system calculating unit costs.

Even though the new factory contained modern equipment, the new operation obtained worse conversion rates than that achieved in the old factory. Profitability clearly depends on achieving the optimal ratio of raw material to end product. For carrots this ratio should be 12:1, but the actual results were closer to 16:1 in some years. Similar poor results were being obtained for other crops.(37) Although it was never actually admitted, this loss of dry matter (by leaching or wastage) was a basic cause of unprofitability.

Previously we discussed Bruckner Werke's concerns about the quality of PVP's final product. Factory breakdowns, absence of spare parts, poor maintenance, and frequent management turnovers were all characteristics of factory operations, particularly once the company's financial position reached crisis point. An analysis of 1980 factory production showed that only 50.8 percent of output had a microbiotic content below legal standards. Of 986 tons produced, 186 tons or 18.5 percent was referred for repick. Thus nearly a fifth of factory picking effort was spent on repicking operations. The management report noted that "this high percentage is not explainable or acceptable by standard manufacturing practices."(38)

However, problems of quality control date to the beginning of new factory operations. For example, in 1976 four containers of carrot flakes were sent to West Germany together with satisfactory PVP laboratory quality-control test results. Bruckner noted that "the control in the laboratory of our customer showed results which were really horrible. Not only the total bacteriological counts were extremely high but there were found such high counts of coliform germs and E-Coli that all the carrots of the four containers were rejected."(39)

Raw Material Procurement Problems

The project's raw material procurement system was to be based on "three legs." One leg was the smallholder farmers in the Kinangop and elsewhere who would provide root crops (primarily carrots) under rainfed production conditions. These farmers would plant in April, May, and June for harvesting from September until March. The second leg was to be Lake Naivasha

private farmers. They would supply specialist crops such as beans and capsicums year-round while supplying root crops during the Kinangop's off-season. The third leg would be company estates on land owned or leased by PVP. The estates would concentrate on the specialist crops, but also do some root crops.

Smallholder Contract Farming

The first leg, that of smallholder contract farmers, served its function fairly reliably up until the project neared financial collapse. During the 1970s the project expanded its geographical scope of smallholder contracting bringing in cooperatives as far north as Nyahururu and as far south as Uplands. At one time or another some 30 cooperatives (or Forest Department employee groups) were active in the project with as many as 3000 farmers under contract.

A contract document between PVP and cooperative society committees was prepared annually, and subsidiary agreements were provided with each issue of seed. Seeds were provided on credit to the cooperatives for distribution to members. Each farmer taking seed made a written statement acknowledging his/her receipt of seed and issuing a "guarantee" to supply the company with a certain tonnage of produce. For carrots, this guarantee generally varied from 5 to 10 tons per kilo of seed. A pre-emergence herbicide, afalon, was used by some farmers. It was provided on credit to the cooperatives and then sold to farmers.

Producer prices were decided at the beginning of each year at meetings between the company and cooperative society committees. These prices were then offered on a "take it or leave it" basis to farmers.(40) The producer price consisted of a basic rate and a bonus rate. The basic rate was paid for all deliveries, subject to deductions for produce that was not first quality. (See below.) Farmers delivering quantities at least as large as their "guarantees" would then receive a lump sum payment calculated by multiplying a bonus rate by the guaranteed quantity. Crops delivered before reaching the tonnage guarantee or accepted after the guaranteed quantity had been reached would be payable at only the basic rate. The bonus rate was generally 40 percent or more of the basic rate. For example, in 1977 the basic rate for carrots was Ksh 195/ton while the bonus was Ksh 80/ton.

The grading of crops was on the basis of acceptable material delivered. Grade I consisted of 0-5 percent unacceptable produce and the full price was paid for this crop. Grade II consisted of 6-10 percent unacceptable produce. For these deliveries the farmer would be docked for the weight of the reject material and would receive 95 percent of the full price for the balance.

Produce was denoted as Grade III if 11-20 percent was unacceptable. Farmers would be docked for the weight of reject material and paid 90 percent of the full price for the balance. Deliveries with more than 20 percent of unacceptable material were totally rejected and the owner was given the option of having the delivery returned at his expense, collecting it himself, or leaving the factory to dispose of it.

The company provided field assistants and placed them in each major growing area. The field assistants were to work closely with the cooperatives to ensure proper planting and cultivation, to determine the timing of harvests, and to organize collection. They provided information to company management by preparing monthly reports on individual production areas. These reports provided information on seed distribution and planting, use of herbicide, weather, incidence of disease, harvesting patterns, demonstrations given, and the illegal sale of the crop to alternative outlets.(41)

The farmers in the Kinangop had ample land and generally grew vegetables in a shifting pattern without the use of fertilizers. Initial ploughing would be carried out by local enterprises and paid for in cash by the farmer. Planting was done during the long rains (i.e., April-June) and harvests took place over the September to March period. While carrots take 4-6 months to reach maturity, they can remain in the ground before harvesting for up to nine months. Most field activities were performed by family labor although some paid labor was used for harvesting. The use of resistant seed varieties made it unnecessary to apply insecticides or fungicides. On the basis of an average yield of 10 tons of carrots per acre, the smallholder farmer could expect a net profit of Ksh 1000 to 1500/acre. A sample 1980 income estimation can be seen below:(42)

Smallholder Production Cost and Income Per Acre(1980)

Seed	Ksh 170
Ploughing	140
Harrowing	130
Sowing	40
Afalon (1 kg)	94
Spraying	40
Hand Weeding and Thinning	400
Harvesting	500
Transport (Ksh 50 per ton)	50

Total Costs	2014
Income 10 tons @ Ksh 330	3300
(Includes Bonus)	
Net Income	Ksh 1286

Demand for seed in the rain-fed areas generally far exceeded what the factory was prepared to issue to meet its requirements. One key problem was to spread this requirement over an extended period. In the early years of the project smallholder supplies were heavily concentrated in only four or five months of the year. PVP attempted to lengthen the smallholder supply season by issuing seed supplies to the cooperatives in three phases over April, May, and June. (43) During several years smallholder deliveries were indeed extended over seven or eight months. For example, during both the 1976-77 and 1977-78 seasons smallholder vegetable supplies exceeded 1000 tons in each month from September to March.

The contracts were theoretically legally enforceable although in fact legal action was never resorted to. Instead, PVP depended on close supervision and disciplinary action by the cooperative committees. Field assistants also monitored the progress of a crop and provided frequent estimates of the standing crop and the crop being harvested. For cases where the farmer sold the produce on the fresh market, the cooperative would issue fines. For persistent cases the farmers would not be issued further seed. Where cooperative support was lacking, contracts with the offending cooperatives were withdrawn. During periods when produce "leakage" was very strong, police checks were established to inspect trucks leaving the smallholder areas. (44) The extent of "leakage" was partly controlled by the selection of a particular carrot variety for processing. The factory distributed seed of the red-cored Chantenay variety. The Nantes variety, favored by the fresh market, was unsuitable for processing. The Chantenay variety was not well liked on the fresh market.

The extent of "leakage" differed by production area. Areas close to Nairobi and well served by all-weather roads were more vulnerable to "leakage" than areas far into the settlement schemes having very poor feeder roads. During periods of glut Nairobi traders avoided the Kinangop altogether as supplies were sufficient from areas adjacent to Nairobi. Some parts of the Kinangop had extremely poor feeder roads and the company needed to hire tractors and even army trucks to collect produce during the rains. Traders would normally avoid these areas.

Part of the attraction of the fresh market was price. Raikes (1978) compared factory prices with those offered by "lorry-traders" and found that while the factory's prices were "marginally" higher during the peak season, they were as little as 1/6 the market price during the off-season. There is no doubt that during certain times of the year market prices were considerably above those of the factory. However, it does appear

that the traders' buying procedures reduced the price advantage of selling on the fresh market.

Carrots are sold by producers by the sack, which, when full, should weigh 60 kgs. Generally the transporters would force farmers to overload the sacks. Woven cord then held the surplus produce in place. Both transport and market levies are charged per unit container irrespective of weight, so the traders have the incentive to maximize the loaded weight of their containers. It was not uncommon for carrot sacks to be overloaded by 100 percent. In fact, a 1983 survey found the average weight of a carrot sack brought to Nairobi's wholesale market was 103 kg.(45) Thus, farmers were providing two sacks of produce while receiving payment only for one sack. Considering this, the prices that the farmers received from the factory may have actually exceeded those for the fresh market over much of the main harvesting season.(46)

Perhaps a more important advantage of selling to local traders was the fact that farmers could avoid paying certain dues and outstanding debts to their cooperatives. Some of these debts were related to inputs for the vegetable project, while other debts would have been related to the other services provided by the cooperatives. Farmers could get ready cash in hand from the traders while payment from the cooperative might have been delayed until all "cooperative expenses" were covered first. Delayed payments became more problematic over time due to the worsening financial position of PVP.

Still, in general terms the smallholder scheme generated a fairly consistent flow of raw materials to the factory throughout the late 1970s. Unlike for largeholder production, raw material supplies from smallholders were not far below the long-term production plan set out in the feasibility study. The following figures represent the factory intake of carrots from the cooperatives:

1976	8961 tons
1977	10281
1978	8195
1979	9141
1980	4849

Performance was generally good until 1980. In that year various problems contributed to a considerable decline in deliveries. One problem was that a large quantity of seed that was provided to the farms was of poor quality and had low germination rates. A second problem was that due to mechanical faults and inadequate fuel supplies the factory was unable to

operate during part of the peak harvesting period. At the same time PVP had inadequate working capital, and payments to farmers were being delayed for several months. With the factory broken down and with payments being delayed, some of those farmers who did have a crop sold it to Nairobi traders. Vegetable producing areas in close vicinity of Nairobi experienced a drought in 1980, and market prices rose considerably. The smallholder scheme did recover for the 1980-81 season with raw material deliveries topping levels for several years in the late 1970s.

Large-scale Farmers

The second leg, that of the Lake Naivasha farmers, never fulfilled the company's expectations, and by the late 1970s raw material supplies from this source had virtually ceased. As early as 1976 it was becoming clear to PVP management that the Lake farmers would not be a reliable source of supply and that greater reliance would have to be put on the company developing its own estates.(47) Horticultural production was expanding around Lake Naivasha, but costs per acre had risen considerably from a decade earlier. In addition to rising fuel costs (for irrigation pumps) these farmers were facing rising agrochemical costs. Furthermore, with the rapid development of the flower sector and with a large number of farmers going heavily into labor-intensive french-bean production, a labor shortage existed in the area and the cost of labor was rising.

Many of the Lake farmers who did not have large acreages found that with normal yields it was only marginally profitable for them to grow for the factory. Even a small reduction in yields brought about by weather, nematodes, or disease would result in losses.(48) These smaller farmers felt that it would be useful to perhaps grow for the factory during the export off-season. Alternatively, they were inclined to send their third-quality produce to the factory after fresh produce exporters and Nairobi greengrocers were provided first and second grades. Neither of these two practices were acceptable to the factory. The factory needed raw materials all year long and not simply during three or four months. It was also impossible for the segmented marketing procedure to work. The factory actually needed first grades and applied its price discounts for any other deliveries. In addition, the factory required particular varieties and these were not the varieties preferred by the local or export fresh market. For example, beans for export are mainly the Monel or Masterpiece varieties which at an early stage develop fibrous strings and are thus unsuitable for dehydration. The Saxa or Contender varieties were required by the factory. Some indication of future trends was seen in 1976 when the Lake

farmers absolutely refused to grow leeks on the basis of the prices and grading arrangements offered.

The factory did have a different price structure for the smallholder farmers growing under rain-fed conditions and the larger farmers growing under irrigation, but due to its accumulation of losses it was unable to increase the prices it paid to the large growers. For most items there was absolutely no price change between 1977 and 1979. By the latter year factory prices had become well out of line with prices for comparable products in the fresh market. Compare below the factory's prices with those offered by a leading exporter:

Producer Price Comparison (1979)

Item	Factory (Ksh/ton)	Exporter (Ksh/ton)
Beans	1020	5600
Leeks	515	2000
Chillies	500	2000
Capsicum	450	750

Some factors were clearly outside of PVP's control. This can be seen in the cases of onions and capsicums. Growing onions for the factory could not be economical given the very low yields that are obtained for this crop in Kenya. No short-day white onion variety of high solid content was available. At the same time a protected market for onions was being established by the Horticultural Crops Development Authority in order to maintain their statutory monopoly on onion wholesaling and in order to protect smallholders in the Perkerra Irrigation Scheme whose yields were less than half those of the Naivasha farmers. While production licensing deterred some growers it encouraged others to grow the product and find grey market outlets.(49)

Farmer deliveries of capsicums subsided with the dying export trade in this product. While peak export levels were reached in 1972 at 1128 tons, thereafter competition from Spain, Israel, and the Netherlands cut into Kenya's market, and exports were down to just 333 tons by 1977. Many of the Italian farmers at Naivasha who had grown capsicums reduced their plantings. Given the factory's price structure, it was not economic for these farmers to grow exclusively for processing.

The Lake farms that were of larger size retained somewhat more interest in growing for the factory. They were in a better position to risk possible losses and in any case wanted to spread their overhead costs among a larger cropped acreage. However, when PVP's financial troubles prevented the company from

increasing producer prices in line with changing production costs, some large farms found that they could get better returns by growing for other Kenyan processors. Tomatoes sold to canning companies generally brought better returns than various vegetables sold to PVP.

Company Estates

The third leg, estate production, was required to compensate for the declining supplies from the private Lake farms. Since 1970 it had become apparent that the factory could not hope to operate effectively on a continuous basis without a nucleus farm under its full control. Until the new project was started in 1975, funds had not been available for such a farm. In any case it had been the policy to depend on the support of local farmers, particularly those in the Kinangop settlement schemes. While not explicitly stated in the feasibility study, the development of a nucleus farm was viewed as a central part of the new project's crop-production component. (50)

Initially an agreement was entered into with Marula Estate to place 400 acres at the full disposal of PVP with the option of a further 400 acres. A contractor was hired to clear the land, but at the last moment the owner withdrew from the agreement. Alternative areas were sought. A plot of land between the factory and Lake Naivasha, owned by the company, was brought into use under irrigation by factory waste water. Although the soil on this 200-acre plot was sodic and restricted in use and also subject to flooding during heavy rains, the company found that it could get a good leek crop from it. Two plots were leased at Morendat. One section of 200 acres was already fully developed and under irrigated lucerne, while another 200 acre plot was developed with irrigation installed by PVP. One additional 200 acre plot was leased on the South Lake side. By 1978, the company thus had a total of 800 acres of land under its direct management.

During the late 1970s the factory's raw material procurement from company-operated estates did increase considerably. In 1976 company estates provided 3185 tons accounting for 17.3 percent of intake. By 1980 company estates provided 7889 tons, accounting for 60.7 percent of raw material supplies. These nucleus estates operated at a continuous loss, however, and by the end of 1979 they had run up an accumulated loss of Ksh 5.8 million.

Part of the poor financial performance of the estates can be attributed to the accounting prices offered by the factory. PVP and its estates subsidiary operated separate accounts and issued independent financial statements. The estates department

essentially absorbed some of the losses of the overall holding company. (51) Farm production costs were estimated in 1976 and accounting prices were set then. These prices remained constant over the next five years despite changes in production costs. A second factor that contributed to losses was the relatively poor yields obtained on the farms. These low yields were attributable partly to inadequate finances that caused problems for the timely application of material inputs, and partly to the poor quality of several plots of land. Over the 1978-80 period average bean yields were 2.2 tons/acre while the estimated break-even point was 3.7 tons/acre. For leeks actual production averaged 8.4 tons/acre, while the break-even level was 11.3 tons/acre. (52)

A third factor contributing to the poor financial performance of the estates was their excessive production costs. An FAO mission examining the finances of the estates found excessive costs attributed to permanent employee salaries that were increasing production costs per crop area by as much as 20 percent.

The estates department reacted to the financial losses and the low factory prices in a rational way. The estates began selling increasing quantities of their vegetables on the fresh market. In 1980 comparisons of estate break-even points for sales on the fresh market versus sales to the factory (at accounting prices) found that factory prices as a proportion of average fresh market prices were as follows: beans 35 percent; tomatoes 30 percent; onions 33 percent; cabbage 40 percent, leeks 30 percent. In 1979 and 1980 estate sales to the fresh market totaled 15 percent and 19 percent of quantities sold and 34 percent and 42 percent of revenue earned. In 1980 the estates sold 2400 tons of vegetables on the fresh (local and export) market at an average price of Ksh 1100/ton, which was 130 percent higher than the average accounting price of Ksh 420 for factory intake.

In 1981 two of the leases held by the company were discontinued by the landowners. By this time the price of land around Naivasha had begun to rise rapidly as Kukuyu farmers who had greatly benefited from the tea and coffee price booms of the late 1970s were seeking farms at Naivasha. The company could neither purchase nor lease land at a cost that could be recovered by growing vegetables for the factory.

As the company could not afford to pay the commercial rates for land at Naivasha it sought to have the Commissioner of Lands compulsorily acquire 2000 acres from the European-owned Marula Estate on the strength that the farming activities constituted a public use. A High Court ruling went against the company's position. A proposal was later submitted whereby the Ministry of

Agriculture would provide the company with at least 1000 acres currently being used by the Naivasha Livestock Research Unit and then acquire the 2000 acres from Marula Estate, since livestock research falls within the definition of public use. After the acquisition the Ministry would provide an additional 1000 acres to the company. The Ministry rejected these proposals and could not provide any land from the research station.

Concluding Remarks

We have reviewed various features and historical segments in the development of Kenya's vegetable dehydration industry and have related these to changing conditions in both domestic and international markets. The industry was born largely in the pursuit of social and political objectives related to the smallholder settlers in the Kinangop. While the project received strong political backing in its early years, it lacked strong technical management and an economically viable production program. The industry was thus unable to take advantage of the expanding West European market for dehydrated vegetables.

The industry's transition into economic viability was increasingly seen to depend upon the injection of international capital and the involvement of a multinational firm with technical and marketing expertise. A marriage, worked out between government investment, international loans, and multinational management, appeared to provide an optimistic future for the industry.

A major assumption of the reformulated project was that it would be economically rewarding for the Naivasha farmers to grow vegetables for the factory. In fact, it was supposed to be the large farmers who would play the key role in raw material production. Changes in factor and commodity markets combined with the factory's grading standards and inability to raise producer prices, however, made sales to the factory increasingly unattractive for these farmers.

The collapse of large farmer supplies considerably undermined the viability of the project. The factory was operating at well below its capacity, with overhead costs thus pushing up unit production costs. The company's product mix was dominated by the low value root crops grown by the smallholders. In response, the company needed to develop its own estates. In this effort there were several constraints. With the Naivasha area experiencing increased horticultural production, less land was available and at a higher cost. The plots of land that the company could operate were not of first-rate quality. Company financial problems constrained the farm-level activities of the

estates department. Government political backing for estate acquisition remained weak as an incipient fear that estate production would marginalize the smallholder farmers prevailed. The extent of political opposition to estate production requires further study.

Thus, the raw material component of the project remained problematic. Only the smallholder contract production scheme provided fairly reliable supplies. With the available information we have been able to examine in only general terms the organization of production, the form of contract, and a few indicators of performance. We have not been able to examine the evolution of the contractual structure and the changing roles of the company and the cooperatives in supporting producers and in enforcing the contracts. Horticultural cooperatives have not generally been successful in Kenya, least of all in relation to contractual arrangements with processors or exporters. It would be useful to understand the wider relationship between the farmers and the cooperatives (i.e., for milk) in order to discover reasons for the apparently useful role of the cooperatives in the case of the dehydrated vegetables project.

It would also be interesting to compare the services provided by PVP and the cooperatives with those offered by the "lorry-traders" in order to gain a better understanding of the "leakage" issue. Was price the main factor? Was the escape from cooperative dues or delayed payments a more important incentive? Was the provision of technical services important to the farmers? Presently we have only limited information on farmer yields and incomes. It would be useful to examine in greater detail actual farmer yields and their variance by area and over time. One would also wish to place the income earned in the vegetable project within the context of the wider sources of income for the smallholder farmers and to trace the uses to which this income was put.

In this study we have noted some of the problems associated with the processing operations. Again, limited information has been available. Was the problem largely one of management? Was any of the equipment inappropriate for the tasks being undertaken, or were inefficiencies in operating procedures and poor maintenance of equipment the dominant factors? Why couldn't quality or conversion-rate results be improved through the provision of technical assistance by Bruckner?

We have examined aspects of the marketing arrangement between Bruckner and PVP, including the conflict over the issue of price. Relatively little information was provided about the marketing procedures and terms of trade that characterized the 1964-1972 period before a major multinational company was

involved. Access to relevant material could provide for an interesting comparison with the later period. While it does not appear that Bruckner generally paid prices to PVP which were "too low," it would be interesting to examine further the general nature of PVP's relationship with Bruckner. Particularly important issues would be information flows, alternative sales outlets, payment procedures, and quality control and claims.

Our analysis of the Kenyan dehydration industry has shown the critical links between production, processing, and marketing, in any export operation. It demonstrates that contract farming schemes should not be examined in isolation from world market patterns for the final product or from changes in domestic factor and product markets. Although apparently successful itself, the smallholder contracting scheme was first undermined and then terminated entirely because of operational inefficiencies in other components of the project.

Notes

1. Philip Raikes (1978) obliquely discusses the project, but is most interested in espousing a general argument about the relationship between international capital and "middle peasants." He provides few actual facts about the project. Dinham and Hines in their book *Agribusiness in Africa* (1983) mention the project as an example of collaboration between governments and multinational companies in the development of "new luxury crops." They provide a few facts about the case, drawing basic information from a few issues of the government magazine, *Kenya Export News*.

2. Tropical Products Institute, p. 7.

3. Ibid.

4. ITC 1981, p.11;50.

5. Ibid., op. cit.

6. Tropical Products Institute, p. 8.

7. ITC 1981; Interview with David Hirst, former Agricultural Manager of the dehydration project (October 17, 1986).

8. SIFIDA (1973), p. 22.

9. David Hirst interview.

10. SIFIDA, p. 22.

11. Some farmers initiated vegetable production during World War II in order to supply the prisoner of war camp at Naivasha which was holding Italian soldiers.

12. Interviews with Naivasha farmers including Dorian Rocco and Cesare Bellyngeri.

13. Ministry of Agriculture (1981), p. 1; SIFIDA, p. 22.

14. SIFIDA, p. 22.

15. Calculated from data in SIFIDA, p. 17.

16. Data in SIFIDA and from the Horticultural Crops Development Authority.

17. Information drawn from SIFIDA, Ministry of Agriculture (1970), and East Africa Excise and Customs data.

18. ITC (1972).

19. This discount cannot be accounted for by Kenya's "low costs." Several high wage countries had supply prices below the average price while a low wage country such as China had supply prices above those of Kenya.

20. As discussed in Ministry of Agriculture correspondence on the project and reported by Makanda (1986) pp. 17-24.

21. ITC 1972.

22. Letter from PVP Managing Director D.M. Watene to PVP Board of Directors dated May 29, 1976.

23. Financial data drawn from FAO (1981) and Ministry of Agriculture (1981).

24. Marketing In Europe, April 1976.

25. Marketing In Europe, January 1984.

26. ITC 1981.

27. However, even slightly declining D-Mark import prices should not have adversely affected the company's ability to repay its loans. The company's foreign currency loans had been denominated in US\$. During the 1970s the dollar devaluated against the Mark by approximately 50 percent and in the second half of that decade the level of devaluation was about 26 percent. In 1970 \$1=3.68 DM. The rate for 1975 was \$1=2.46 DM and in 1979 \$1=1.83 DM. Thus, in the second half of the decade even if prices in DM did not show a favorable trend, their dollar value certainly did as seen below:

US\$ Equivalent of West German Import Prices (Per kg.)

	1975	1976	1977	1978	1979
Carrots	1.54	1.48	1.65	2.00	2.19
Leeks	1.61	1.46	1.86	1.98	2.31

Source: Calculated from data in ITC 1981; IMF International Financial Statistics, 1980

28. This is the general impression provided by correspondence between Bruckner and PVP management in the late 1970s.

29. "We get no information whatsoever on the prices paid by the end-user; such information is vital in conducting price negotiations with Mr. Bruckner since it would enable us (to) take

advantage of favorable demand conditions." This statement was made in a PVP management memo dated December 20, 1976 entitled "Management and Marketing Agreement: Main Aspects Requiring Review."

30. Ibid.; also KETA 1981.

31. Draft Cooperative Agreement Between Pan African Vegetable Products and Brueckner-Werke KG.

32. Letter from H. Glockner (Bruckner) to General Manager Watene (PVP) dated September 15, 1978.

33. Ibid.; also letter from Glockner to PVP on December 8, 1977 concerning quality claims.

34. See note 32 above.

35. Letter of November 14, 1980 from General Manager H.A. Odour of PVP to the Chairman of PVP's Board of Directors.

36. "A Review of Bruckner Werke's Sales Contracts" dated June 21, 1978 and carried out by PVP's Financial and Administrative Director. It examined contracts over the 1976-78 period.

37. Correspondence with David Hirst; also a document called PVP Review 1980 showed conversion rates for most items considerably less than "standard" rates.

38. PVP Review 1980, p. 31.

39. See note 33 above.

40. Correspondence with David Hirst.

41. Included in field assistant reports were discussions of cooperative committee meetings that had taken place and what was said about PVP at these meetings.

42. Revised from an estimate found in PVP records. The PVP calculation was based on a yield of 14 tons/acre. David Hirst reports that 10 tons/acre was more the norm.

43. Raikes (1978) contends that because farmer yield was affected by the time of planting, the company had "an intermediate form of control over the producers through the ability to reserve "prime-time" contracts to producers who are "cooperative." Raikes admits that he has no evidence for this "but it is almost certain that the extension agents of the company, who implement the regulations, do so to their own benefit even if the company does not." I have come across no evidence for this discrimination in seed distribution and this

issue is not one that farmers have raised when rendering complaints about the project.

44. Interview and correspondence with David Hirst.

45. "An Analysis of all Fruits and Vegetables Sold at Wakulima Wholesale Market During 1983" FAO/Ministry of Agriculture. Horticultural Marketing Project.

46. It should be noted that farmers sometimes complained that company staff were underweighing produce at times and taking part of the supplies for their own use or sale.

47. See note 22 above.

48. "Minutes of Meeting at PVP with Naivasha Farmers" dated May 1, 1976.

49. This paragraph is based on FAO (1981) and interviews with Hirst and with Naivasha farmers.

50. Correspondence with David Hirst.

51. Argued in FAO (1981), financial section.

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CHAPTER 2

CHARACTERISTICS OF THE
HORTICULTURAL EXPORT ENTERPRISES
UTILIZING CONTRACT FARMING SCHEMES
IN SENEGAL

by

John S. Horton

INTRODUCTION

CHARACTERISTICS OF THE HORTICULTURAL EXPORT ENTERPRISES UTILIZING CONTRACT-FARMING SCHEMES IN SENEGAL

The purpose of this report is to characterize the nature of the Senegalese horticultural-export sector that utilizes contract-farming schemes so extensively. Ten field interviews form the basis upon which the report draws its conclusions. These ten firms account for 95 percent of the Senegalese national fresh-produce exports currently allocated by the interindustry Airfreight Committee. Most of the firms rely predominantly on contracts for their supply of produce, and many source all of their fruits and vegetables this way. All twelve of the horticultural export companies in Senegal depend on contract farming to some extent.

The results of the ten structured interviews are included in their entirety in ANNEX I. SECTION I draws upon the profiles to generalize about the characteristics of the firms and their approaches to contract farming.

A. The Introduction of Contract Farming to the Horticultural-Export Sector in Senegal

None of the exporters currently active in the fresh horticultural sector had begun operations before the early 1970s when BUD-Senegal started up its massive estate-grower export scheme. Some of the growers had begun growing fresh produce for the local market as early as the 1950s through a cooperative union called SYNJAMAR (Syndicat des Jeunes Agriculteurs Maraîchers.) As the name maraîcher implies, the growers depended then as they do today on the humid or marshy areas, specifically the region referred to as the Niayes.

The Niayes is that swath of wetland growing area some ten to thirty kilometers wide that extends from the Cap Vert region near Dakar hugging the coastline up to St. Louis. The agricultural economy of the Niayes has shaped the development of contract farming in Senegal to a considerable extent. Limited availability of these prime growing areas represents an important factor conditioning the expansion of horticultural farming and exporting as it is currently practiced.

BUD had a substantial and lasting impact on the development of the sector in Senegal. At its peak, BUD-Senegal was exporting 12,000 metric tons of winter vegetables to Europe. All twelve exporting entities together now ship only half that amount. The technology introduced and the market channels opened by the large-scale estate growing operations, however, provided the basis upon which contract farming was later to develop.

It is doubtful that the horticultural export industry could have established itself in Senegal to its present extent, were it not for the massive initial investment by BUD-Senegal. Production and marketing of export produce requires a specialized expertise and supervision that goes beyond the technological requirements of producing traditional cash crops, not to mention traditional food crops.

Groundnuts were the preeminent cash crop in Senegal until recent years. This provided a pool of farmers familiar with the use of improved seeds, fertilizer, and phytosanitary products unfamiliar to traditional food crop farmers. Few of these semitradeational cash-crop farmers, however, would have possessed the knowledge of irrigated row-crop farming sufficient to grow produce to export specifications. Before the introduction of a wide variety of agronomic technologies by BUD, even local-market produce farmers such as those associated with SYNJAMAR lacked the experience with the breadth of crops and their associated agronomic challenges necessary to form the basis of the industry.

The challenges posed by marketing fresh horticultural commodities internationally exceeds even the difficulties of growing the products. A few of the largest Senegalese produce shippers today (e.g. TOLL, SAFINA, JARDIMA) initiated operations during the early years of BUD. These firms had the capacity to market produce but would have lacked the pool of potential contract growers of the magnitude that BUD served to develop.

The pioneers of Senegalese produce exporting definitely paved the way for many of the smaller firms that would have lacked the familiarity with the export systems and the ties to European markets that are the legacy of the exporters of the 1970s. It is important to bear in mind that produce marketing does not lend itself to the establishment of an export marketing board of any sort. The perishable nature of the produce necessitates direct links between producers, shippers, and broker/importers in the market place. Produce markets are extremely dynamic. The commodities are not readily standardized into homologous shipments that can be traded in uniform lots. The nature of the product requires regular and direct contact with the European importers. Produce demands an aggressively vigilant control over handling, grading, cooling, and air freight shipping conditions.

One may speculate as to whether another firm might have taken the initiative, had BUD-Senegal not played the lead role it performed. The essential point with regard to understanding the nature of contract farming, however, is that the present contract system in Senegal could not exist were it not for an available supply of growers familiar with specialized technology but who

directly in exporting.

B. Key Institutions : GEPAS, ASEPAS and the Airfreight Committee

As of 1986, twelve groups are actively exporting fresh horticultural products. All are members of either GEPAS (with 78 percent of export volume) or ASEPAS (with 22 percent.) To date all of the exporters have used contract farming, and most rely upon it principally or exclusively.

Table 1 summarizes the tonnage of fresh produce exported by each firm and association during the 1985-86 shipping season. Table 2 is a graphical representation of the market share held by each firm.

GEPAS and ASEPAS

GEPAS is a groupement d'intérêt économique, a legal entity that is generally used to form a corporation from a cooperative membership to enhance a group's ability to negotiate more effectively as a united industry. Until the formation of GEPAS two years ago, the only representative body was ASEPAS, a somewhat looser association of both exporters and producers. Today only four of the twenty-five ASEPAS members are exporters. Only one is a relatively high-volume exporter (JARDIMA). Without the participation of the most substantial member, ASEPAS would likely collapse. All of the other important fresh produce exporters are members of GEPAS.

The scope and capacity of the Export Associations are limited. Their foremost purpose is to represent the interests of exporters vis à vis the Government, the air freight companies and, to a lesser extent, the importers. Specifically GEPAS and ASEPAS endeavor to speak with one voice vis à vis the other members of the Airfreight Committee, the central forum for issues pertaining to their interests. The Associations help to provide feed-back to members on issues that may effect the industry.

The Associations are voluntary and work without any support staff. They engage in no promotional campaigns, provide no credit, nor serve any function other than provide an organ through which exporters can meet to pursue their collective interests.

Air Freight Committee

The pressures for rationalizing the access to air cargo space resulted in recent years in the creation of the Air Freight Committee (Comité de Fret Aerien.) The Committee is overseen by the Civil Aviation Board (Direction de l'Aviation Civile). Its membership includes representatives of the aircargo companies, of

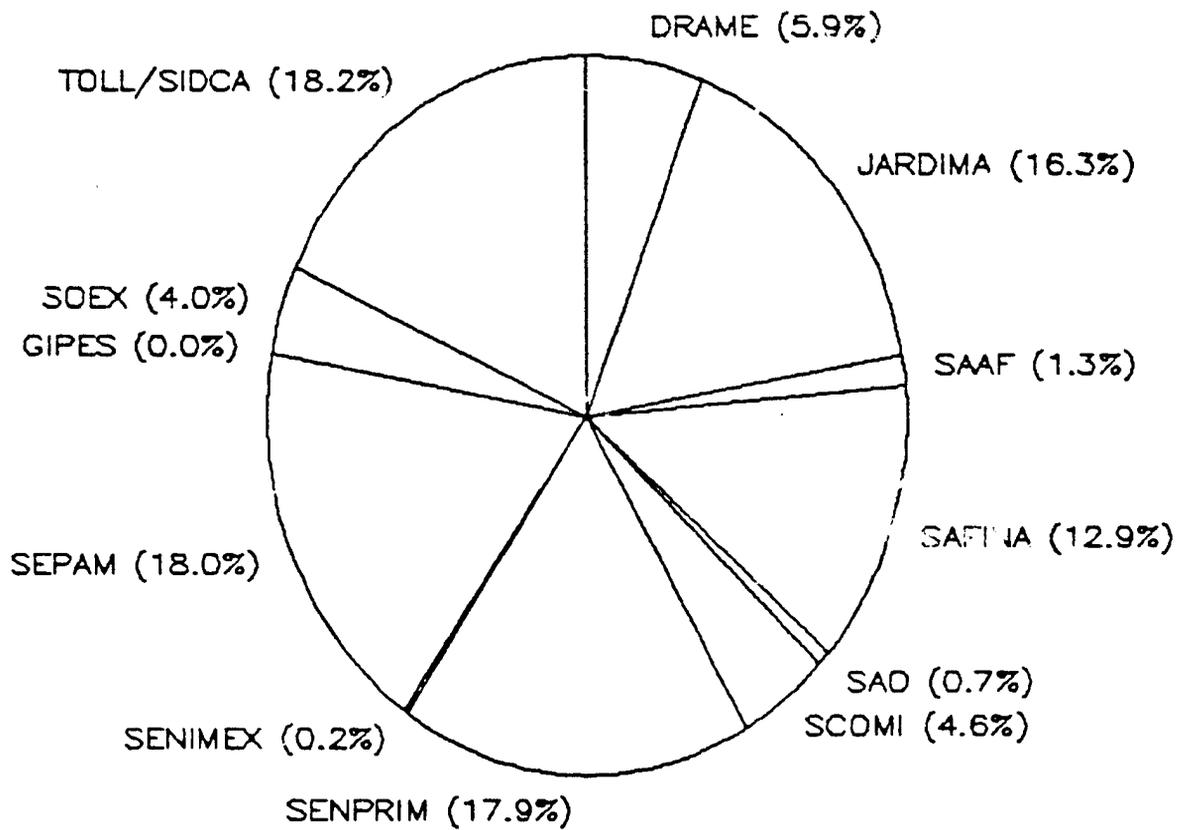
TABLE 1: TOTAL SENEGALESE FRESH PRODUCE EXPORTS

EXPORTERS	TOTAL TONNAGE	TOTAL % BY FIRM
GEPAS MEMBERS		
SENPRIM	1079.18	17.86%
SIDCA	144.71	2.39%
TOLL SELECTION	952.40	15.76%
SEPAM	1090.60	18.05%
SAFINA (AGROCAP)	779.61	12.90%
SOEX	242.74	4.02%
ETS. T. DRAME	358.41	5.93%
SAAF	79.99	1.32%
GIPES	NA	NA
TOTAL GEPAS	4727.64	78.23%
ASEPAS MEMBERS		
JARDIMA	987.64	16.34%
SCOMI	276.01	4.57%
SAO	39.54	0.65%
SENIMEX	12.18	0.20%
TOTAL ASEPAS	1315.37	21.77%
GEPAS & ASEPAS TOTAL TONNAGE	6043.01	100.00%

(SOURCE: Senegalese Plant Health Inspection Service,
Yoff International Airport, Dakar, 1986)

TABLE 2:

MARKET SHARE BY EXPORTER (1985-86)



membership includes representatives of the aircargo companies, of the freight forwarding and transportation companies, of the national plant health inspection service, and all exporters of fresh produce.

Exporters are dependent on airfreight under the currently prevailing conditions. Development of the market niches and export systems required for sea freight is only just beginning. Sea freight was used in the early period of produce export development in the heyday of BUD, but is only now being reconsidered as the air freight opportunity has become saturated.

The policy developed by the Air Freight Committee to allocate the limited space available to exporters of fresh horticultural goods was to use the volume exported during the 1985-86 season as the basis for space quotas during the 1986-87 season, which began in November 1986. Thus total air shipments were frozen at near 6000 MT for the season, allocating 78 percent (4730 MT) to the GEPAS membership and 22 percent (1320 MT) to the ASEPAS membership. Part of the problem with the situation before the implementation of the new policy was that more cargo space was booked by produce exporters than was actually delivered for shipment. This problem in turn arose at least in part out of the contract farming system and the vagaries of grower deliveries to exporters.

The system allocating access to shipping thus perpetuates and is quite simply predicated upon the status quo. The past performance of exporters determines their allowance under the currently frozen export quotas. None of the exporters interviewed cited difficult access to freight space as a problem during the earlier unregulated era. The real problem arose in fact when exporters were collectively unable to supply as much air cargo as they had promised to deliver. A recent meeting of ASEPAS brought up the issue of establishing ground rules for the cancellation of booked space in sufficient time for other firms to take advantage of the space. This approach strongly suggests that the industry perceives the struggle to achieve consistency and dependability of production and delivery as a collective battle rather than a free-for-all fight to grab space away from competing exporters. Each firm perceives the current airfreight allocation as a constraint to growth under periods of optimal output. They simultaneously expressed their understanding for the underlying failure to achieve consistent performance as the root of the essentially punitive allocation imposed by the Airfreight Committee after repeated experience with reserving space for which the produce was not delivered.

C. Three Types of Senegalese Horticultural Export Enterprises

All of Senegal's current production of fruits and vegetables grown for the fresh export market can be broken down into three distinct groups:

TYPE 1) Smallholders grouped together to contract with exporters. This is the most common pattern and accounts for the bulk of current output. For example, all of SENPRIM (former BUD-Senegal) production is contracted in this way. Each grower typically works gardens of between 2000 sq m and 4000 sq m. The estimates in SECTION I indicate that about 70 percent of all exported volume is produced this way.

Not all smallholders, whether contracted or not, will deliver to the exporters as agreed. All exporters interviewed complained of the frequency of farmers' defaulting on their contracts. Still other farmers grow independently without the benefits of direct contracts. Thus there is generally produce for sale on the open market. During the November to May season merchant-exporters are eager to purchase the produce on a spot-market basis. It is difficult to gauge the magnitude of these spot-market transactions, whether with broken contractors or independent smallholders, but all indications suggest the volume is substantial. The estimate of TYPE 1 production at 70 percent includes the total volume produced whether delivered under contract or to the open-market.

TYPE 2) Individual farmers operating on a sufficiently large scale to contract directly with exporters. Only a handful of micro truck farmers are associated with each of the dozen produce exporters, but their aggregate acreage is substantial. They usually run small mechanized operations of between one and five hectares (25 times as much acreage as a 2000 sq m smallholder.) Table 5 (see SECTION I) estimates that micro truck farmers produce 17 percent of all fresh produce exports. These estimates were drawn from data supplied by the firms with which these larger growers contract. Interviews with micro truck farmers in the course of a future study would likely prove a rich source for insights into the contracting system from a grower perspective.

TYPE 3) Estate Growers. Only one of the current exporters who reports practicing "régie directe" (estate growing) should be included under this rubric. What this refers to in most cases is simply the means of production. Exporters commonly refer to régie directe as any large area cultivated mechanically and irrigated by non-traditional means (diesel pumps or SONES public utilities metered sources.) Upon closer enquiry these areas turn out to be contracted as well, though with TYPE 2 contracts rather than TYPE 1. Only one company relies principally on estate-growing (SAFINA.) The volume of this non-contract growing is significant (12 percent), but clearly secondary to contract horticultural farming.

The contracts used between exporters and growers are written documents that ostensibly carry the force of law. In practice that law is exceedingly difficult to enforce, as the comments of

various exporters attest in the interviews. A sample of an actual contract between an individual small-scale truck farmer and an exporter (SAAF) is included in Annex III. It bears noting that in the particular case of SAAF most of its contractors defaulted, to which the company finds no recourse.

SECTION I

SYNTHETIC AGRIBUSINESS PROFILE

The following characterization of the agribusinesses utilizing contract-farming schemes in Senegal represents a synthesis of the data collected from the ten exporters interviewed. The results of the structured interviews with each firm are included in their entirety in Annex I.B through I.K. The organization of the synthetic profile diverges from the organization of the individual profiles in some significant ways.

Eight of the ten points covered in the interviews are presented here under six headings. The data reported in the complete interviews as "1. OVERVIEW OF START-UP" have been divided here into a review of personal biographical data (I.A below) and a review of the choice between contract farming vs. estate growing (I.B.below.) The two remaining points not included from the complete interviews are "8. PROBLEMS/SUCCESS" and "10. PROGRAM INTERVENTIONS." These observations have been incorporated respectively into the two Sections that follow, "SECTION II: Contract Farming Issues" and "SECTION III: Program Responses."

A. Start-Up of Contract Exporters

Previous Produce Export Background

Most of the firms were initiated by entrepreneurs with a commercial background rather than direct experience in growing and shipping agricultural produce. This is significant since it predisposes the firms towards the purchase of products on contract rather than involvement in direct growing operations. The relevant experience of each firm is summarized below:

1. SENPRIM: Extensive experience as the pioneer grower-shipper group in Senegal.
2. SIDCA-TOLL: SIDCA had no direct experience in the produce field, but recently has acquired that background by joining forces with the TOLL SELECTION group managed by a major French produce import/export firm with expert grower staff in-country.
3. SEPAM: The family has developed experience and training in pertinent areas in recent years, but lacks the expertise and means to undertake direct farming.

4. SAFINA: Sole major estate-grower of produce in Senegal today.
5. SOEX: Extensive experience as traders. Ventured into agriculture only in recent years.
6. DRAME: Considerable experience in freight and shipping, but no production background.
7. SAAF: Long experience in agricultural processing and trade. No produce industry experience.
8. GIPES: Academic background in growing and shipping, but only starting in practice.
9. JARDIMA: Considerable experience in Mali and Senegal in the produce business.
10. SENIMEX: Experience limited to commerce and promotion.

Four major firms possessed substantial previous experience in produce growing and shipping, SENPRIM, TOLL, SAFINA and JARDIMA. Table 3 depicts the relative importance of firms with significant previous produce industry experience. While these companies ship about two-thirds of the total volume presently allocated, the presence of various smaller exporters conditions their behavior. All of the companies realize that as long as Senegalese commodities fetch acceptable profits in foreign markets, an array of exporters will compete for contractors and their product. It is less clear that all of the competitors have a comparable commitment to behavior that would tend to assure the longevity of the industry. Some of the behavioral issues pertinent to that longevity are raised in SECTION II.

Foreign Origins of Companies

Several of the companies began with considerable foreign backing. One group (SIDCA/Toll Selection) continues with substantial expatriate involvement. Another company (Ets. T. Drame) was sold to its Senegalese manager. The other major expatriate firm, BUD-Senegal, was started with American and European capital and technicians but is now entirely operated by Senegalese government employees who contract for their produce with local farmers.

Four exporters, accounting for half of the current total exported output, are Senegalese of Middle-Eastern origin. Table 4 depicts the market share of these companies graphically. All have been Senegalese for generations. There is no indication

TABLE 3

PREVIOUS AGRICULTURAL BACKGROUND (FROM THE TEN PEOPLE FIRMS)

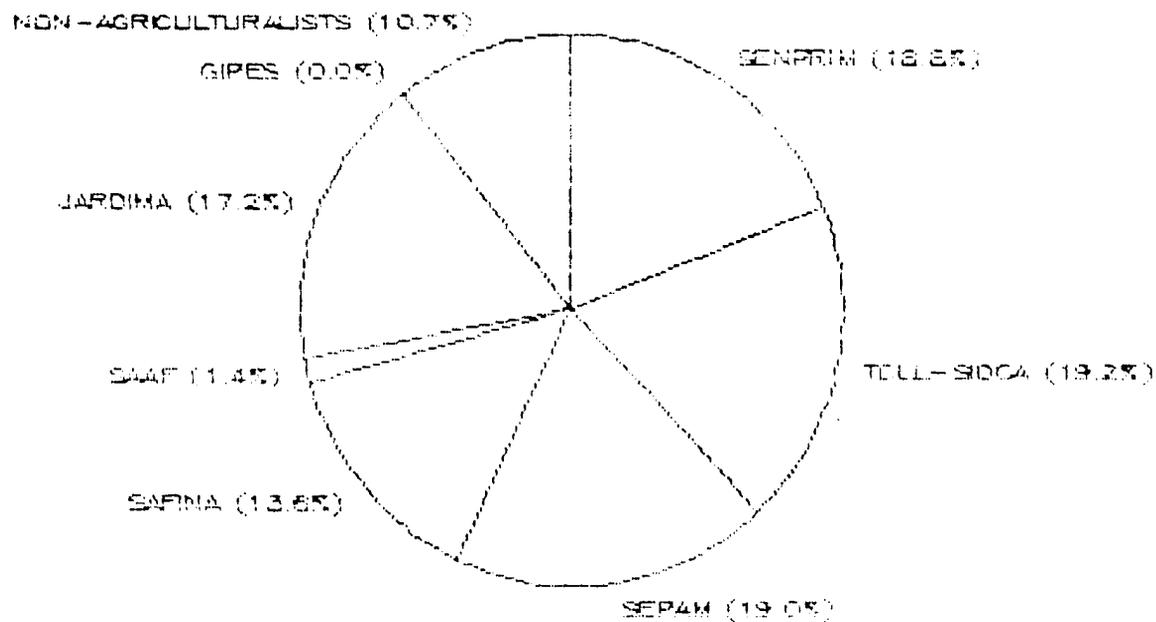
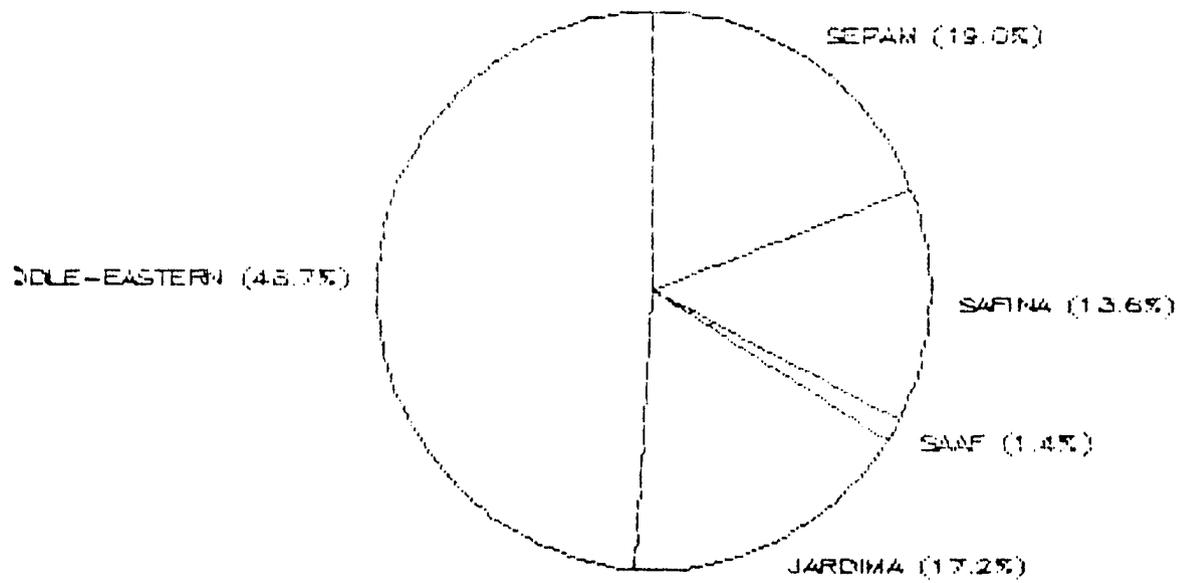


TABLE 4

ENTREPRENEURS OF MIDDLE-EASTERN ORIGIN
(FROM THE TEN PROFILE FIRMS)



that these three companies and families differ significantly from other exporters in their commitment to the development of the sector or their willingness to reinvest their capital in Senegal.

Some of the exporters themselves raised the issue of social origins in a quite different regard. The exporters of Middle-Eastern origin in Senegal are Christians in a predominantly Moslem society. Various exporters expressed their experience that the few Christian smallholders with whom they contracted tended to respect the sanctity of their contracts to a far greater degree than did the Moslem contract farmers.

Five of the twelve export companies are controlled by Senegalese of Senegalese origin. These account for just one sixth of the total output, however. (SOEX, DRAME, SCOMI, SAC, and SENIMEX.) None of these smaller firms came to the horticultural export sector with previous direct involvement in growing operations. The smaller firms tend to follow the pattern of businessmen looking to diversify their investments away from other commercial enterprises.

B. Choice of Contract Farming vs. Estate Growing

Only one exporter, SAFINA, makes substantial use of an estate-grower scheme, directly producing 90 percent of its export volume. This represents 12 percent of the national export volume. Computing estimates of the use of micro truck-farmer contracts by each firm reveals that this type of production (referred to as "TYPE 2" in the introductory overview) accounts for 17 percent of the national production. Table 5 depicts the importance of individual truck-farm contracts. Small-scale grower contracts provide the remaining portion of the national export volume, approximately 60 percent in all.

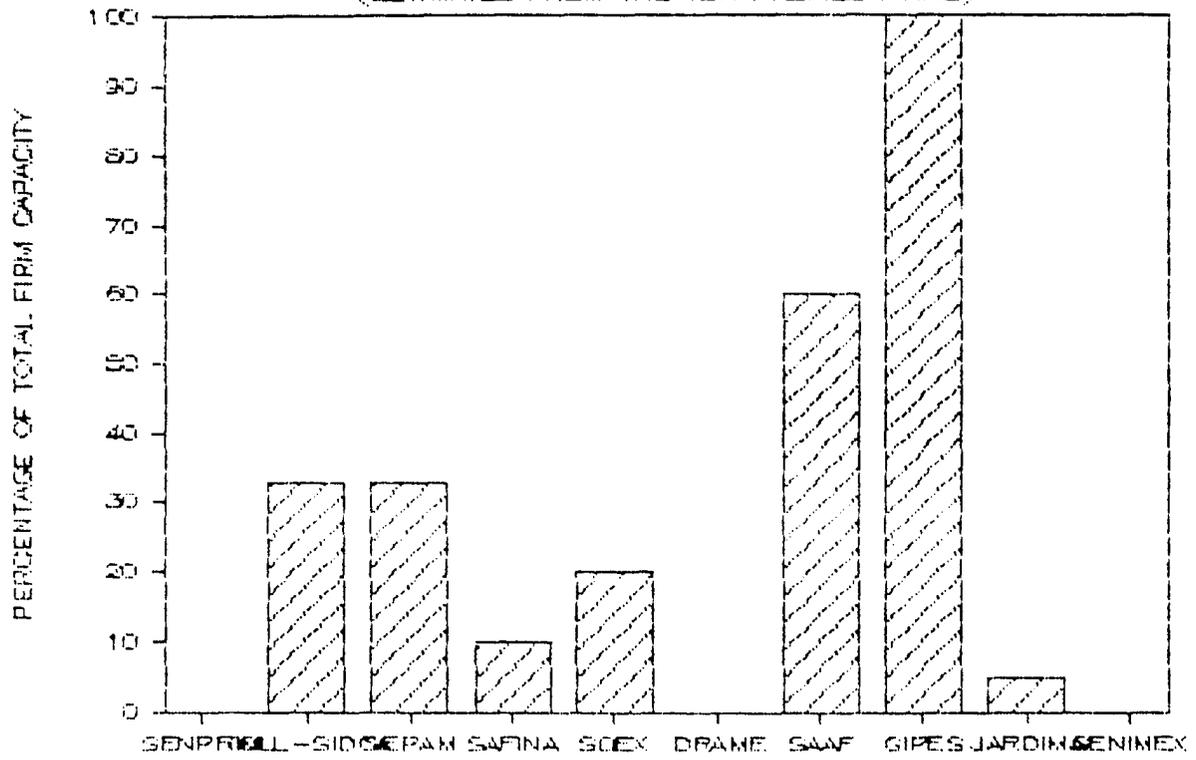
The synopses below address the choice made by each firm to pursue contract farming rather than direct growing schemes:

1. SENPRIM (Formerly BUD-Senegal)

House of BUD, a European affiliate of Bud Antle, Inc. of Salinas, California, began the first large-scale production of export fruits and vegetables in Senegal under an entirely estate-grown production scheme. It is important to note that this ambitious start-up was part of a vertically integrated production-marketing corporation quite unlike most of the firms exporting from Senegal today. Furthermore, as a pioneer exporter, BUD-Senegal had no alternative horticultural-product sources of the magnitude and varieties it needed. Only after the horticultural export technology introduced primarily by BUD diffused to independent growers did it become possible for

TABLE 5

USE OF MICRO TRUCK FARM CONTRACTS (ESTIMATES FROM THE TEN PROFILE FIRMS)



exporters to contract with growers capable of producing to their specifications.

SENPRIM was born into a situation that lay at the opposite end of the private-public spectrum. As an entirely government-owned and operated corporation, SENPRIM had no alternative but to rely upon the growers who were left when BUD-Senegal was dissolved.

2. SIDCA/TOLL SELECTION

La Cours, a very substantial French importing firm, is the marketing firm behind Toll Selection, now SIDCA/Toll Selection. Starting up at about the same time as BUD-Senegal in the early 1970s, though producing no more than an eighth of BUD's output at its peak, the La Cours affiliate was also obliged to operate entirely as an estate grower until 1980. The company prefers to remain a contract exporter. Currently SIDCA/Toll operates as one of the largest contractors of beans and peppers in Senegal.

3. SEPAM

The firm began substantial operations in the beginning of the years when contract farmers were becoming available. SEPAM currently has one contract with a melon producer that may be considered a micro estate grower. The substantial majority of its products are contracted from small semi-traditional growers.

4. SAFINA

SAFINA is currently the most important independent grower in Senegal. It employs a handful of contract outgrowers on a trial basis. While the firm perceives advantages to the flexibility of contract arrangements, it finds the contracts insecure and prefers to rely upon their substantial and technologically advanced productive capacity.

5. SOEX

SOEX is a relative newcomer to the fresh horticultural export business. It is a firm that can remain in the business only so long as contract farming remains feasible. The parent company is a medium-sized diversified national company that has neither the inclination nor the capacity to involve itself directly in estate production.

6. ETS. THIerno Drame

Etablissements Thierno Drame works entirely with contract farmers. The firm has neither the means nor the access to economical land and water that would enable Mr. Drame to ponder the prospect of estate-farming seriously. The configuration of contracts held is similar to the system used by most contract

exporters. Growers are divided between what Mr. Drame refers to as the "traditionels" and the "projets." The projets, as he terms them, are individuals with up to several hectares who deal with him directly as individuals. The traditionels are semi-traditional farmers of quite limited resources who form groups of fifty to sixty farmers under each "chef de secteur."

7. SAAF

SAAF operates a combined contract and direct production scheme. It is difficult to characterize that mix as the firm has been the neglected subsidiary of a more important agricultural processing company (coffee roasting). Last year for example the company had seven medium to large (3 to 8 hectares) contracts that could have produced many times greater tonnage than was actually exported. The choice of mixed direct and contract farming arose in part from the direct involvement of a French melon importer from Cavaillon looking for off-season melon operations and who was able to supply direct market links and technical supervision.

8. GIPES

GIPES is a new and unusual entity. It is composed of a group of young independent farmers who found themselves unemployed after having completed their master degrees in agricultural disciplines abroad and at the University of Dakar. The government, through the national development bank SONABANQUE, has helped to form and promote this group. GIPES will rely entirely on the production of its members working small farms of varied acreage. Contract farming does not fit into their overall development plan.

9. JARDIMA

The company purchases its produce through guaranteed contracts administered through forty-eight "chefs de zones." The firm has concentrated its efforts on state-of-the-art packing and cooling facilities and on the management of export facilities, rather than on emphasizing direct involvement in production. The company until recently operated a successful mango-exporting operation in Mali. JARDIMA has developed a comparative advantage in areas that enable it to utilize the contract-farming system efficiently.

10. SENIMEX

SENIMEX is a small firm that depends entirely on contract farmers to supply it with beans for the fresh market. As stipulated in the characterization of "Type 1" producers, many of these "contract farmers" are selling to SENIMEX on a spot-market basis.

C. Selection of Products and Markets

The contract farming system as it has developed in the Senegalese horticultural sector does not favor a dynamic relationship between product selection and market demand. The orchestration of all the elements of the production/export chain required in order to respond to the changing conditions of the European (and alternative) market places exceeds the short-term coordination capacity of the present contract system.

Interviews with the exporters reveal several general patterns. The firms have redirected their marketing plans little since they were originally laid out during their respective start-up periods. Furthermore, the export product mix is the same or nearly the same for all firms. Sixty-nine (69) percent of all fresh produce is beans of one sort or another. Beans, melons, and peppers account for 96 percent of all exports. Only eight commodities are exported in all. Five firms currently export three or fewer commodities.

Table 6 analyses the distribution of fresh produce exported from Senegal by commodity. A pictorial presentation follows the completed interviews in the Annexes. The Annex tables break down the same data to present a graphic representation by firm. The same scale is maintained to facilitate a quick visual comparison of the firms.

D. Contracting Farmers and Negotiating Prices

The quite small acreage farmed by the typical¹ contract produce farmers in Senegal means that an exporter is required to deal with as many as one thousand growers to have enough product for even a small-scale operation. On the other hand, the requirements of operating a viable export operation are prohibitively expensive for small truck farmers or cooperative groups of growers to contemplate direct exporting.²

¹ According to a Ministerial survey report, the average smallholding is only 2000 sq m: "Communication en Conseil Interministeriel sur le Maraîchage," Report of the meeting of November 29, 1984, Ministry of Rural Development.

² The average export enterprise ships 500 MT annually. A minimal sustainable operation in the long run is probably on the order of 100 MT annually. The 100 MT firm would require at least US\$200,000 in working capital. If one assumes that half of the working capital required could be generated from cash flow from sales, a minimum of \$100,000 would be needed. The more typical 500 MT firm would require some \$500,000 in annual working capital. This says nothing of the fixed investment cost requirements of a packing facility.

TABLE 6: DISTRIBUTION OF FRESH PRODUCE COMMODITIES EXPORTED FROM SENEGAL (1985-86)

EXPORTERS	FILET	BOBBY	MELONS	TOMATOES	PEPPERS	OKRA	EGGPLANT	MANGOS	TOTAL TONNAGE
SENPRIM	31.65	626.30	306.47	15.79	95.85	0.00	3.12	0.00	1079.18
SIDCA	100.36	40.05	0.00	0.00	4.30	0.00	0.00	0.00	144.71
TOLL SELECTION	610.51	236.46	0.00	0.00	105.44	0.00	0.00	0.00	952.40
SEPAM	390.45	161.04	433.83	5.02	85.67	1.87	0.00	12.73	1090.60
SAFINA(AGROCAP)	239.26	92.51	254.71	148.88	39.98	4.28	0.00	0.00	779.61
SOEX	186.01	35.64	0.00	0.00	21.09	0.00	0.00	0.00	242.74
ETS. T. DRAME	107.78	222.14	11.48	0.00	17.00	0.00	0.00	0.00	358.41
SAAF	0.00	0.00	79.99	0.00	0.00	0.00	0.00	0.00	79.99
GIPES	NA	NA	NA	NA	NA	NA	NA	NA	NA
JARDIMA	580.98	265.42	1.64	4.70	134.46	0.44	0.00	0.00	987.64
SCOMI	106.05	97.52	16.17	0.00	56.27	0.00	0.00	0.00	276.01
SAO	3.26	34.02	0.00	0.00	2.26	0.00	0.00	0.00	39.54
SENIMEX	4.46	7.72	0.00	0.00	0.00	0.00	0.00	0.00	12.18
TOTAL TONNAGE BY COMMODITY	2360.78	1818.81	1104.29	174.38	562.33	6.59	3.12	12.73	6043.02
COMMODITY AS % OF TOTAL	39.07%	30.10%	18.27%	2.89%	9.31%	0.11%	0.05%	0.21%	100.00%

(SOURCE: Senegalese Plant Health Inspection Service, Yoff International Airport, Dakar, 1986)

Chef de Groupement

To enable the exporter to manage so many growers, farmers are obliged to group together. A "chef de groupement" or "chef de secteur"³ serves as the intermediary between the farmers and the exporter. Those larger scale growers referred to previously as "micro truck farmers" require no intermediary. They sign contracts directly with the exporter.

The relationship between the chef de groupement and the growers merits considerably more attention than it has received to date in the literature. Discussions with exporters suggest that these intermediaries recruit growers to form a contract group. Instances in which a prospective contract group designates a leader or representative undoubtedly occur. An empirical analysis to determine the relative frequency of the two approaches (recruitment vs. community organization) would be valuable to understand the relationship between the growers and the exporters. The importance of the issue is to determine whether the chef de groupement tends to behave more as an advocate of the interests of the farmers or of the exporter. Even chefs de groupements who are from the rural milieu and designated by their respective grower groups may eventually become increasingly dependent on the exporter.

The chef de groupement does not serve primarily as an extension agent between the exporter and the growers. His primary responsibility is to act as the titular contractor. He is responsible for the collective performance of the small-scale producers. The chef de groupement is theoretically independent of the exporter. The interview with Etablissements Drame (see Annex) suggests how that distinction may become blurred through the tendency for the intermediary to become indebted to the exporter. The chef de groupement receives no salary, but earns his living by commission based on the performance of the group.

The scope of the present study did not permit an investigation of the position of these intermediaries. Preliminary impressions, however, suggest that there exist a great variety of relationships between the chefs de groupement and the exporters. In some cases the responsible party is a grower himself, while others are rural entrepreneurs. These

³ Exporters appear to use a variety of terms interchangeably for the same function, to wit "chef de groupement," "chef de zone," or "chef de secteur." Elsewhere in West Africa these same terms are used to distinguish different levels of the private extension service hierarchy in large-scale cash crop schemes such as cotton.

section bosses vary in their degree of involvement in technical extension activities as opposed to their purely coordinative role.

Price Negotiation

As a matter of practice, product price negotiations do not appear highly problematic. Exporters report that the farmgate price history has been relatively stable for the crops produced. Any more detailed investigation of the negotiation system should corroborate these assertions with historical price data. All interviewed, however, indicated that prevailing rates were generally well recognized and were not the subject of great contentiousness. The tendency toward a uniform producer price is favored by the recognition among exporters that price variability greatly increases the chance of broken contracts in an environment where the sanctions for default are weak. This is not to imply that a degree of price fixing occurs. There is no evidence to suggest that collusion is necessary to maintain a stable purchase price under the current situation.

Many exporters report that they take an average of the past several years to determine the following season's price at the time contracts are signed. Furthermore, historically many of the exporters are merchants who respond to the opportunity presented by a particular commodity price and their speculation of the Paris price. They tend to behave more as price takers than as price makers. Given the current air freight ceiling, which has resulted in the Air Freight Committee is allocating frozen export quotas, the presence of what are essentially surplus buyers in the market will be reduced. Nonetheless the greatest likelihood is for stable pre-season contract prices.

H. The Operation of Contracts

The day-to-day operation and oversight of contract produce farming in Senegal varies little between grower groups or export companies. Exporters provide credit, seed, and occasionally tractor service. While some firms still provide fertilizer, the experience in recent years is that the farmer finds it more profitable in the short-run to sell the fertilizer on the open market as a scarce highly liquid commodity. Brokers report that fertilizer is in fact as good as money in rural communities. It is more expedient to provide the farmer directly with credit.

The technical assistance lent to farmers comes to them from the chefs de groupement. The exporters in turn support these extension personnel with their own personnel. The in-house technical assistants interact with the commercial agents to stay abreast of problems in quality or changes in preference in the market. In addition to the agronomic problems such as plant disease, infestation, and fertilizer or water response rates,

private extension agents must be aware of the economics of producing to different size specifications. The semi-traditional farmers have a strong tendency to maximize production volume rather than to analyse the price structures so as to maximize revenue by responding to premia placed on size specifications. This is particularly apparent in the string beans, which represent nearly forty percent of all Senegalese exports.

Assembly and packing of produce at harvest is the responsibility of the exporting firm. It provides the transportation to collect the product for weighing, cleaning, sorting, and grading at the packing sheds. The sophistication of the packing operation varies greatly. The economies of scale in packing mean that generally the most advanced and efficient packing lines are operated by the high-volume exporters.

F. Financial Results

The exporters interviewed varied in their willingness to reveal their financial results. That willingness did not seem to be a function of whether their performance had been good or bad. Companies with results on both ends of the spectrum responded. The competitive nature of the business, however, suggests that exposing too much would be unwise. Without firm indications of that performance it is difficult to ascertain which approaches to contract farming hold the greatest promise. Those results that exporters did reveal are summarized below:

1. SENPRIM: After a slow start-up SENPRIM showed three strong years of profit, 1980-83. Since then it has suffered one substantial loss, followed by losses of less magnitude.
2. SIDCA-TOLL: TOLL Selection is one of the only firms that responded that it has had positive financial returns rather consistently. The 1985-86 season showed a loss, while the previous years were profitable after export subsidies. No financial data were available for SIDCA.
3. SEPAM: SEPAM broadly described its results as four bad years, and one that was about break-even.
4. SAFINA: The estate-farming business has proven lucrative consistently. The contract-farming portion of the business has failed, but remains on an experimental basis.
5. SOEX: The past year brought failure. SOEX did not describe the preceding years' performance.

6. DRAME Etablissements Drame reported a moderately profitable trade until the mid-1980s, followed by two losing years.
7. SAAF SAAF has never shown a profit, remaining solvent through the mother-company that has neglected it.
8. GIPES The GIPES group has only attempted trials thus far. There is little indication as to their collective financial performance.
9. JARDIMA JARDIMA did not characterize its financial results.
10. SENIMEX This small venture has never generated much profit. The owner reported that 1982-83 proved more favorable than the other years.

Examining the financial bits and pieces from the structured interviews yields some evidence, though only in the broadest strokes. To the extent that the sketchy impressions can be relied upon, a few of the firms have consistently performed well or poorly. Among the remaining firms industry-wide performance trends exist. The early 1980s brought profits to most, turning to a mediocre performance by 1983-84. During the past two years virtually all firms have lost money in contract farming. None of the exporters conveyed the sentiment that the industry was in peril in the immediate future, but most acknowledged that declines in Senegalese productivity coupled with the entry of so many other producer countries into the market has resulted in declining profits for most firms.

SECTION II

CONTRACT FARMING ISSUES

A number of salient issues have come out of the field research process. Some of them are particular to the Senegal case, but most have importance for contract farming of export commodities anywhere in Sub-Saharan Africa.

A. Problems Inherent in the Poverty Cycle vs. Opportunities for Market Access

The difficulty that many smallholders have surviving leads to management practices that run counter to the system of contract farming. The sanctity of contracts is not widely respected. This is due in large measure to the short horizon of farmers who are concerned with surviving one season at a time. In this same environment the allocation of resources is skewed towards fulfilling immediate needs. Inputs received for contract production are frequently diverted to meet pressing needs, only to find shortfalls at harvest that lead to default or indebtedness, thus perpetuating the cycle.

All of these difficulties must be seen against the highly attractive advantages contract farming can offer to smallholders. Without credit and input advances, most small-scale producers would be unable to muster even a small operation. Access to improved seed varieties, technical assistance and credit may only be through contract farming. Contract farming is definitely the only means by which these same producers can gain access to the primarily foreign markets for these products.

B. Limited Skills and Flexibility of Contracted Growers vs. Market Dynamism

A severe handicap of the contract farming system as it now exists in Senegal is the period of time required for farmers to adapt to a new production technology. When market demand changes for the narrow array of commodities that most growers produce, and when the market niche shifts to new commodities, farmers are unable to respond. To capture a shifting opportunity, producers assisted by exporters have to learn of all the particularities of the crop, its handling and preferred specifications. All the while the market opportunity for new products may emerge and old opportunities languish. The system is relatively cumbersome for semi-traditional farmers to adapt to market changes in the short-run.

Farmers seeking to adapt to new cultivars or other innovative production practices must rely on the limited extension resources of the export companies, other farmers or, in some cases, their chef de groupement. Only the export companies

provide specialized inputs such as improved seeds, fertilizer, and plant protection products. Government extension services do not support contract export farmers. The benefits of Government technical support only filter down to export-oriented contract farmers in a limited and indirect fashion. The Government conducts research at the National School of Horticulture, for instance, which addresses some of the technical problems farmers encounter. Exporters however generally expressed the opinion that these sorts of Government research projects did not yield practical results in a timely fashion. The private sector finds that it must rely on its own resources to address technical difficulties but that the costs are prohibitive to invest in substantially broader extension programs.

C. Tendency Towards the Emergence of Larger Scale Enterprises

Contract farming as it is practiced in the export horticultural sector tends to favor the emergence of relatively large-scale operations that can maintain close contact to various markets and respond to changes in demand in a timely fashion. In the case of Senegal, this tendency has not played itself out to the detriment of smallholders for the most part. The particular land tenure and water access situation in Senegal, described in further detail below (Subsection G), protects smallholders from losing a substantial share of the production opportunities to larger producers. If however other countries are able to respond to changing market opportunities better than the Senegalese can under the predominantly smallholder contract farming system in Senegal, the country as a whole will lose market share to those countries in which production costs are similar or lower and whose products respond more precisely to market demand.

The tendency towards large-scale operations has few exceptions with respect to horticultural export enterprises. Whether in Senegal or elsewhere, the scale of operations necessary for an exporter to sustain a viable business precludes small firms from starting up. The conservative estimate of working capital requirements presented in Section I (Footnote 2) was of \$100,000 for a small enterprise and considerably more for the typical packer-shippers.

D. Short-Term Business Opportunities vs. Long-Term Development of the Horticultural Sector

This dilemma primarily concerns export firms that have no long-term commitment to production in Senegal. They are conditioned by their commercial experience that, as the market opportunities shift, they may no longer be involved in the same product lines. There is a tendency for merchant-exporters to disregard long-term production issues.

The short-run profit mentality poses a fundamental challenge to the future of contract farming in Senegal. Those firms that engage in "open-market" purchases regularly benefit from the sale of produce grown under contracts with firms that have been broken. This represents a transfer of capital from the original contract exporter who ultimately exports the product. Undoubtedly some of these transfers off-set others as an exporter whose contract is broken may resort to spot-market purchases himself.

The effect of the prevalent tendency to accept purchase on the spot-market from producers who have defaulted (whether through re-vendors or not) introduces costly inefficiencies into the export market coordination process. Furthermore, the economic costs of these inefficiencies mean very real financial losses for those who do not succeed in their buying strategies. Despite this substantial imperfection in the contract farming system in Senegal, exporters who cannot contemplate estate growing realize that they could not operate at all were there no contract farming system. The great mass of horticultural farmers could not afford to grow without the advance of credit and technical inputs that the contract farming arrangement supplies. The spot market would soon dry up were the bulk of growers not able to plant under contract.

The dilemma of short-term vs. long-term gain applies to the farmer's situation as well as to the exporters. As discussed further below (Subsection G), many of those interviewed cited problems of soil depletion and diminishing yields. This phenomenon is linked to the issue of the poverty cycle. As explained with regard to the tendency of contractors not to provide fertilizer inputs, farmers often liquidate their fertilizer to attend to other cash needs.

The diversion of fertilizer to other activities does not necessarily suggest that other agricultural activities are more lucrative than is contract farming. The contract exporters report that the fertilizer is converted to cash rather than applied directly to other crops. It is uncertain whether this is a rationale decision with regard to allocation of household resources. There may be little choice in the short-run. In the long-run however it depletes the productive capacity of the land, constituting a negative externality of the smallholder industry for the broader agricultural economy.

E. Market Information Issue

This issue can be greatly exaggerated or misconstrued. Sophisticated market information systems are not likely to yield important benefits to export firms. Telephone and telex connections are effective links between exporters and importers already at the disposal of every firm. More sophisticated

analysis of ephemeral market news cannot be utilized by these firms at any rate, but they need long-term market analysis and exploration of new opportunities. Most of the firms expressed considerable interest in understanding the U.S. market and regulatory (APHIS) system better.

The Animal Plant Health Inspection Service of the United States Department of Agriculture is responsible for granting or denying clearance to foreign exporters and domestic importers of all unprocessed agricultural commodities. The system can prove to be a daunting one even for those familiar with it. This constitutes a significant hurdle to market entry. An understanding of that system is a form of long-term market information that would prove invaluable to Senegalese exporters who are eagerly awaiting access to the strong New York market. They await taking advantage of the available direct flights to New York for that there is no freight quota or shortage of cargo space. Exporters have grown accustomed to the easy access to the European market. They must now become better informed as to how to accede the American market.

A horticultural production system that relies extensively on smallholders is limited in the rapidity with which it can respond to changing opportunities. This does not mean however that there is a less important role for market information development than there is in the case of estate grower production systems. It simply means that the types of market information interventions need to be tailored to relatively longer-term information utilization needs.

F. The Freight Issue

Expansion of contract farming must take into consideration important constraints in volume imposed by the available freight capacity. As has been explained with reference to ASEPAS, GEPAS, and the Air Freight Committee, the freight volume is currently frozen. Government intervention would be required before this constraint could be eased. Unless this occurs, alternative markets will have to be developed.

The freight dilemma is particular to Senegal in only in its details. The inherent link to contract farming is that part of the problem has arisen because of the difficulties shippers have with providing space to unpredictable deliveries. Currently ASEPAS is working on a system to shift the burden of responsibility to exporters in a way that will insulate the industry from the poor performance of a few. In the past, non-delivery of produce has had repercussions for all members, even when only a minority of exporters may be delinquent.

G. Water, Soil Fertility, Conservation, and Land Tenure Issues

The growth and nature of the growth of the contract farming system in Senegal is critically shaped by the availability of economically irrigable land, specifically the

band of land from Cap-Vert to St. Louis called the Niayes. It is of note that the current system tends to favor smallholders because of their access to economical water. The soil depletion dilemma previously mentioned will however tend to reduce productivity under the current system.

The smallholders have access to economically exploitable land where larger-scale farmers do not. The question of access is a matter of land tenure. Smallholders who settled the Niayes long ago retain usufruct rights to the land. The parcels that come available at what would be an economical price for new farmers do not constitute tracts of land large enough for mechanized farming on a large-scale. Moreover small-scale farmers are able to draw water through labor-intensive techniques with no capital expenditure. Larger-scale operations are obliged to function with diesel pumping of metered wells. The lands available that fulfill both the acreage and water cost requirements to produce at competitive costs lie too far away to operate under the current system. The coincidence of these various circumstances form the basis of the continued comparative advantage of the current smallholder contract farming system.

The significant development that is only just beginning to emerge in response to these circumstances will be export production for sea freight. Already SENPRIM and others are preparing to grow and ship produce varieties that can sustain maritime freight handling conditions and still fetch a profitable margin in Europe. This will mean the expansion of tracts in the northern Niayes that are less occupied than are the Cap Vert garden perimeters. Independent and estate growers will find land that can be cultivated and irrigated economically on a larger and more mechanized scale.

Under the current Government the system of usufruct rights to land in the Niayes is not likely to change, thus tending to guarantee the contract farming system that relies heavily on smallholders. This situation may not be true for many other countries or for Senegal for all times. Exploration of various land tenure issues by USAID is currently under way. The basic point is to consider this element of the overall production environment whenever evaluating the feasibility of any prospective contract farming scheme.

H. Suitability of Horticultural Export Contract Farming System to Production for the Local Market

Contract farming for sale in the local market already exists within Senegal. However the Senegalese experience suggests that contract farming primarily for the local market makes little sense. Important secondary or residual flows from the export trade will however continue to have significance for the local trade. Should current exporters succeed in expanding their aggregate exports substantially the secondary flows of some commodities could prove disruptive, even disastrous, to those who produce directly for the local market. This is an unfortunately common experience in developing economies that emphasize export horticulture involving products for which there is a local market, since the "rejects" may well be disposed at prices well below producer costs. The fact that few of the commodities exported to Europe in large quantities (e.g., green beans and peppers) are in great demand in Senegal tends to protect the local producers to some extent.

It bears noting that the single largest producer for the local market is also the single largest produce estate-grower (rather than contract-grower group) in Senegal. SAFINA (formerly AGROCAP) grows both for the export market and for the local market. The key to their production-market coordination for the Dakar market is their vertical integration. The mother company operates a small chain of grocery stores (Filfili), which it supplies from its own production.

The market price level and level of specialized expertise required to produce traditional crops are both too low to create the conditions necessary for contract farming. The non-traditional crops also demanded by the local market are supplied in good part from secondary and residual flows of the export trade. ("Rejects" in the export trade often refer to off-sizes or shapes that are highly saleable in the local market.)

The important possible exceptions to this general rule are onions and potatoes. Price levels during their off-season is apparently sufficient for a potential commodity developer to invest in the storage technology necessary to capture the market opportunity.

I. Technology Transfer: Needs for Improving Extension

Growers currently possess a limited repertoire of agronomic techniques, though some of them have become quite expert in one or two commodities. The initial transfer of production technology to a large number of growers associated with the original BUD-Senegal scheme appears to have been one of the project's principal benefits. Continued extension support is

needed to maintain a vital contract farming system. Without additional training, or technical support through trained extension agents (whether public or private), the farming resources will tend to constrain the expansion of new commodities under cultivation.

Chefs de groupement are not primarily responsible for providing extension support and are inadequately suited to do so. Exporters find the costs of developing a stronger extension staff exceeds the benefits under the prevailing conditions. Government extension agents are too few and poorly trained to address the problems of export horticultural crops. The issue placed at the feet of those who wish to initiate training programs for extension specialists is the determination of what will be a cost-effective means of upgrading the extension capacity.

SECTION III

PROGRAM RESPONSES

The analysis of the Senegalese contract farming case suggests various programmatic responses that may be of interest to the Government of Senegal or international donor groups, notably the Agency for International Development. While the Consultant's scope of work does not specifically include making programmatic recommendations, a few brief suggestions are proffered here by way of a conclusion to some of the issues raised in SECTION II.

A. USAID/Senegal's Current Orientation and Interests

The USAID Mission has cordially received all three of the Contract Farming Study research visits to Senegal. The Agricultural Development Officer was nonetheless obliged to stress that the current priorities of the Mission allow little opportunity for important interventions regarding contract farming in Senegal if they were to be proposed.

The USAID Mission priorities rest in three areas: 1) Irrigation; 2) Conservation; and 3) Agricultural Policy. The latter might be construed to include contract farming policy issues, but primarily centers on macroeconomic tariff and trade rationalization. One exception may be privatization issues effecting SENPRIM. USAID has already received a mission to propose an approach to the impending privatization of the company.

Notwithstanding the current priorities of USAID/Senegal, the opportunities for the Agency for International Development to intervene effectively in the horticultural sector in Senegal merit consideration. There exist a number of interventions that would have excellent prospects for success. These projects could be undertaken by centrally funded programs, or by assisting non-governmental organizations already in the field.

B. Program Orientation and Interests of the Agribusinesses

The individual firms were forthcoming in their suggestions, many of which are worthy of further exploration for the development of the current contract farming system, whether in Senegal or elsewhere.

Particularly if American development agencies were to lend assistance, one of the consistent suggestions of exporters is that they be assisted through programs that would allow them to accede the New York market. Such a program is not without precedent. Many countries assisted by USAID have received

support to learn how to export more effectively to the American market.

Another consistent theme in the agribusiness perspective of their own needs was training and technical assistance. The produce export sector exists today because of skills that were transferred to Senegalese growers over a decade ago. Exporters are keenly aware of the importance of continual development of their extension capacity.

C. SEMPRIM Privatization

The Center for Privatization, funded by the AID Bureau for Private Enterprise conducted a study in September 1986 to recommend how SENPRIM should undertake its proposed privatization. The report emphasized measures that would be necessary to induce private foreign and local investors to take equity shares in the company. The Government and SENPRIM officials appear to be intent on restructuring the parastatal, but as yet have not proposed a plan to do so. Assisting in a privatization plan that is realistic in the Senegalese context would be a most valuable contribution to contract farming in Senegal. It could furthermore create a precedent that could be followed in other developing countries where contract farming is prevalent.

D. Technical Assistance in Extension (U.S. Observation and Training)

An excellent contribution American assistance could offer to strengthen the horticultural export sector and the contract farming system in Senegal concerns transfer of extension techniques, both in production and marketing. An important twist recommended here would be on-site participation and "hands-on" training rather than degree-granting programs.

E. Market Information Development and Special Case of US Market and APHIS

Following on the issue raised above, a cost-effective program of market information development could be designed. The special case of access to the US market and the instructing exporters on the basic aspects of the APHIS system would prove invaluable. Such a project, in conjunction with other efforts to advance American market information development in Senegal is entirely feasible and quite valuable.

F. Interventions for Contract Farming Development for Local Market

Two important exceptions to the general rule that contract farming is not well adapted to production for direct local market consumption are the cases of onions and potatoes. This is because of the investment, carrying costs, and technical knowledge of conditioning involved in these storable yet perishable commodities. Furthermore this development would lead to a regional trade in these staple food crops that chronically suffer from dramatic price variations over a widespread area on sub-Saharan Africa under the prevailing conditions. Dissemination of the best storage technology information would be an important first step. The Post-Harvest Institute for Perishables at the University of Idaho would be the logical organization to take a first step in this direction.

G. Floriculture

Developments in the local floriculture and live-plant trade in Senegal suggest that it merits further investigation as a new realm of export development that fits the characteristics of a commodity system suited to a contract growing scheme. Small-scale intensive ornamental plant growers have developed just outside Dakar adjacent to some of the same areas used by vegetable growers. The market for tropical and off-season plants in the European and American market is certainly strong enough to warrant closer scrutiny of pro forma production and export budgets for ornamental plants. Once the profitability of these products is demonstrated, the same sorts of interventions suggested here in support of other horticultural products would serve to promote this important potential diversification of Senegalese contract production and export.

ANNEX I
AGRIBUSINESS PROFILE QUESTIONNAIRE

A. Question Format

Presented below is the original format of the structured interviews conducted with all ten agribusinesses profiled.

QUESTION FORMAT

COMPANY: _____

SOURCE: _____

DATE: _____

-
- 1) Système de contrat v. Régie directe. Situation contractuelle avant BUD-Sénégal?
 - 2) Profil biographique/historique de l'initiateur.
 - 3) Sélection de produits à exporter.
 - 4) Étude du marché.
 - 5) Développement des marchés nouveaux.
 - 6) Négotiation de prix (formule?)
 - 7) Organisation de producteurs.
 - 8) Collection de produit après la récolte.
 - 9) Détails operationels:
 - A) Recrutement
 - B) Détermination de superficie exploitée
 - C) Provision d'intrants agricoles
 - D) Encadrement
 - E) Résolution de disputes sur les contrats.
 - 10) Transformation.
 - 11) Problèmes/Succès principaux.
 - 12) Résultats financiers.
 - 13) Divulgarisation observée.

ANNEX I.B.: EXPORTER PROFILE 1

COMPANY: SENPRIM
ASSOCIATION: GEPAS
DATES: November 26, 30 and December 5, 1986
LOCATION: Patte d'Oie (offices), Dakar; Kirene and
Baobab farms, Cap Vert region
TELEPHONE: 22.67.89 and (Direct:)22:53.02
SOURCE: Lamine Ndiaye, Production Manager

1. OVERVIEW OF START-UP

BIOGRAPHICAL SKETCH

Most of the Senegalese horticultural export enterprises are operated as extensions of family businesses, as tends to be the case the world over. Biographical sketches of the principals has particular importance as part of the overall case study. A biographical sketch of SENPRIM does not make similar sense, since it is a parastatal. What does bear noting is that even the mother company that gave its name to the Senegal project, Bud Antle of Salinas, California, was also a majority family-owned private company at the time. (It was subsequently acquired by Castle & Cooke, well after BUD-Senegal was dismantled.) The individual who was most closely associated with the start-up of the BUD-Senegal operation is Mr. Fritz Marschal, a German produce broker. Marschal held the majority of the shares of House of Bud, S.A., a firm set up and incorporated in Brussels in 1968 with the primary purpose of launching the Senegal project.⁴

Since the Government of Senegal formed SENPRIM and took over all of BUD-Senegal's operations, the Ministry of Rural Development (MDR) has overseen its management. The first Director, Mr. Paye, who served in 1979 and 1980, has returned to MDR. Mr. Waly Ndiaye served from 1980 until very recently, returning to MDR as Director of the Direction de L'Agriculture. The new Director, Mr. Ousmane Seck has just come from the Direction de L'Agriculture where he served as Director of the Studies division. It bears noting that while the management of SENPRIM has been conducted by Government functionaries, many of

⁴ The history of BUD-Senegal is traced as part of the dissertation of Maureen M. Makintosh, "The Impact of Newly-Introduced Estate Farming on the Surrounding Rural Economy: A Case Study of Bud-Senegal 1971-1976," University of Sussex.

the technical directors are former BUD-Senegal employees with considerable practical experience.

CHOICE OF CONTRACT FARMING

To maximize output the Production Manager would gladly return to the system of direct operation of the Kirene and Baobab farms initiated by BUD-Senegal in the 1970s. This is not an alternative, given the socio-political circumstances. SENPRIM is committed to sustaining its operation under the contract farming system that guarantees employment to 650 families through this state-run operation. The course that SENPRIM will pursue under the proposed privatization initiative is yet to be defined.

The investment in infrastructure required for a larger-scale operation is already in place. The SENPRIM estate farms cover 316 hectares. All are irrigated using pump stations on the property owned and operated by SENPRIM. The field layout and access permits the use of any of the large-scale equipment that an estate grower might find efficient due to the economies of scale it would permit. Furthermore the situation of the packing facility adjacent to the largest farm gives the operation the autonomy a packer-shipper seeks, while most of its competitors are obliged to carry produce to central grading and packing stations from numerous contractors dispersed throughout the area.

2. PRODUCT SELECTION

The product selection of SENPRIM is to a considerable extent a legacy of BUD-Senegal. The export items are: green beans (bobby), string beans (filet), peppers, melons, tomatoes/cherry tomatoes, and eggplant. Last year (1985-86) air shipments were as follows:

ITEM PERCENTAGE

Bobby	58
Melons	28
Peppers	9
Filet	3
Tomato	1
Eggplant	<1

Initially BUD-Senegal grew a larger gamut of products. Their single most significant crop was yellow bell peppers. They also exported iceberg lettuce that is the commodity for which Bud Antle was best known. The market opportunity for these additional crops has since been lost due to developments in other growing areas closer to the market, developments in which the original principals have participated.

Various volumes of each of the export crops that do not meet export specifications or timing go to the local market. Overall SENPRIM production volume is about evenly split between the domestic trade and the export market. SENPRIM grows onions, cabbages exclusively for the domestic market. It also grows tomatoes under contract in more significant amounts than it grows for export.

3. MARKET STUDY AND DEVELOPMENT

BUD-Senegal was a market-driven company from its inception. Mr. Marschal, who is credited with launching the venture, was a produce broker in search of a country and a production scheme that could respond to his needs for off-season commodities for a market with which he was quite familiar. Specifically, the original market program emphasized specialty peppers.

The difficulty with the orientation of the original scheme is that the plan appears to have been part of a strategic marketing scheme with expedience rather than long-range durability in mind. As the market niches and windows have changed, and the initiators have had the luxury of moving on to new and "greener gardens," the Senegalese committed to national development do not have the same freedom.

Under SENPRIM little has been done to reexamine the marketing plans systematically. Formal market studies have not been undertaken. The staff intends to redress this situation. All of the necessary elements will be gathered at the end of this season.

SENPRIM appears to monitor the changing market environment as well asor better than most of its competitors within GEPAS and ASEPAS. It relies upon the same sources of information using telephone, telex, and direct visits to Europe and from European buyers to stay close to the market. SENPRIM's current clients are distributed as follows: France (2); Belgium (2); Holland (2); and Switzerland (1). As most Senegalese exporters, the firm follows market trends through its subscription to the COLEACP European market information service.

The parastatal firm has the capacity to devote more ample resources to following market developments than do some of its competitors. The size of their operation and the fact that it has an obligation to maintain a full complement of staff members as a parastatal firm means that it can afford a higher degree of specialization than other firms. In most firms all functions are closely held by a core of family staff members.

The firm is currently experimenting with sea freight shipments of certain commodities. It will be in a position to capitalize on this new marketing approach should this prove to be profitable. This is an example of how SENPRIM has the capability to reassess evolving export opportunities, probably more vigorously than many other firms.

4. PRICE NEGOTIATION

Determining and negotiating prices is a straightforward process. SENPRIM financial and technical staff analyse the basic parameters of production and marketing to determine the competitive range between production costs and historic market price range. Once they determine the range of acceptable grower prices, the production director meets with representatives of the producer groups to higggle haggle (bana bana, as it is called in Senegal.) The negotiation process appears to be good-natured though sometimes protracted. Expectations are tempered on both sides by the tendency for well recognized prices to prevail among the various exporters.

5. LABOR ORGANIZATION

The 650 producers who contract with SENPRIM on its four farms are comprised of individual farmers and farmer households working as a single productive unit. These productive units are two small and numerous to contract directly with the firm. The transaction costs would become prohibitive trying to account for all the inputs and outputs of each producer. The firm instead contracts with forty-seven (47) groupements. The representative of each of the groupings is chosen by the farmers, often an extended family member.

The relationship between SENPRIM and its contract farmers differs from the relationship of other exporters and their growers in the Senegalese fresh produce system. Typically Senegalese growers who contract with exporters are spread out among disparate parcels. The situation at the Kirene and Baobab farms created by BUD-Senegal resembles the sorts of outgrower schemes used for plantation commodities, in which the population is concentrated in an adjacent area, coming to work on on continuous expanse of land operated by one company. The relationship between the company and the community is significant. Dating back to the inception of the Kirene and Baobab farms, BUD-Senegal was demonstrably involved in community development activities. During a site to the farms Mr. Ndiaye pointed out various structures and improvements of the adjacent villages provided by or assisted by the company.

6. FIELD COLLECTION AND PACKING

SENPRIM operates its own vehicles entirely to collect harvested produce from the fields. The produce is then transported directly from the farms to the packing shed located on the larger farm.

The cleaning, grading and packing station is equipped with a system comparable to that found in European or American packing operations, but the facility shows its age and that it has not been upgraded in many years. The packing lines and refrigeration units of the best of the competitors are superior to the SENPRIM equipment in its present condition.

7. GENERAL OPERATIONS

The structure of SENPRIM and its approach to contract farming derives directly from the estate grower scheme established under BUD-Senegal. Their direct involvement with overseeing the provision of all inputs including water distinguishes them from contracting exporters who entered the industry primarily as traders. The production staff oversees every detail, affording a higher degree of extension oversight and troubleshooting.

The centralized configuration of the SENPRIM contract grower scheme facilitates their overall coordination. Its communication with the production staff and extension workers is facilitated by constant radio and direct contact between the farms and the commercial representatives.

8. PROBLEMS/SUCCESS

As the financial results indicate in the section below, SENPRIM has been operating at a loss during the past several seasons. Were it not for substantial government subsidies to the firm, it would already have entered bankruptcy. The problems from which the firm suffers are not fundamentally related to the contract farming system, though they are related to the SENPRIM's unique status as a government-operated contract exporter. The two most basic problems are declining sales over the last eight years and poor yields.

The problem of overfarming, which afflicts all production in the Niayes to some extent, is especially acute in the case of SENPRIM, which is committed to farming mainly in Kirene and Baobab. Were it obliged to invest in restoring the fertility of the area, it could not compete with others not similarly constrained. Thus the yields of the older farm lag behind the newer, and both have declined over the years.

Sales have declined over the years principally as a result of developments in other growing areas in Africa and the Mediterranean. To put this in perspective, one must recall that while the dozen exporters divide the 6000 MT annual quota currently, BUD-Senegal formerly exported 12,000 MT alone.

9. FINANCIAL RESULTS

The following summary of results comes from published SENPRIM financial reports updated by Mr. Ndiaye :

NET PROFITS (Millions of F CFA)

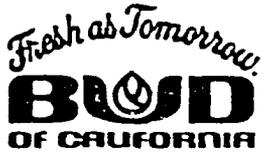
SEASON	79-80	80-81	81-82	82-83	83-84	84-85	85-86
NET CFA	-15	+35	+74	+114	-43	-15	-20

10. PROGRAM INTERVENTIONS

The privatization of SENPRIM is the program area of greatest relevance and concern to the firm. The current dependence on subsidies to hold the firm back from the brink of bankruptcy reveals that the organization needs to change fundamentally if it is to operate profitably again. Premature privatization without fundamental reforms would, however, mean condemning the firm to failure.

The study undertaken by the Center for Privatization as part of an Agency for International Development initiative represents a first attempt at analysing some of the issues of privatization. The emphasis of that study was on what it would require to induce a foreign investor to take over the operation. The commitment of the Government and of SENPRIM to a national perspective suggests that the appraisal of alternatives should be based on the assumption that the firm would remain under Senegalese ownership with or without Government participation.

Another area of interest for program review expressed within SENPRIM is developments in domestic food crops, especially onions and potatoes. They recognize the need to diversify as the markets for some of the previously profitable export commodities have dried up.



BUD of California
1979 Letter Re:
SENPRIM Take-over

BUD ANTLE, INC. POST OFFICE BOX 1759 SALINAS CALIFORNIA 93902 PHONE 408/422-6671

January 22, 1979

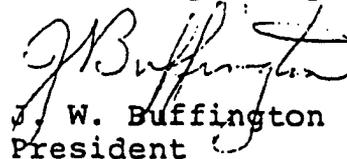
Mr. John S. Horton
Fletcher School of Law
and Diplomacy
Tufts University
Medford, MA 02155

Dear Mr. Horton:

I received your letter of January 12 inquiring as to Bud Antle, Inc's activities in Senegal. Some years ago we provided technical expertise and the use of our "Bud" label for certain quality produce to be produced under a joint program with the Senegalese government in Senegal. After the program got on its feet, we phased out of any active role in the program. Currently, we are in no way connected with that operation and no longer even provide technical services. The Senegalese government and people have taken over the operation completely.

As of February 6, 1978, Bud Antle, Inc. merged with Castle & Cooke, Inc. So that you might better understand what we do, as well as what the entire organization of Castle & Cooke does, I am enclosing a brochure, "The World of Castle & Cooke". I hope this will help to put things about our company into perspective. Thank you for your interest.

Yours very truly,


J. W. Buffington
President

JWB:kdg
Enclosure

EXPORTER PROFILE 2

COMPANY: SIDCA/TOLL SELECTION
ASSOCIATION: GEPAS
DATE: Friday November 28, 1986
LOCATION: 750m SW off of Km.4 Route de Rufisque, Dakar
TELEPHONE: (c/o SIDCA 21.56.04)
[La Cours, Paris (4)6.86.48.47]
SOURCE: Mr. Georges Venot, Manager and
Technical Director

1. OVERVIEW OF START-UP

SIDCA (Societe Industrielle Dakaroise des Conserves Alimentaires) is a food processing firm that diversified into produce exporting. SIDCA no longer performs any of the day-to-day operations that are now entirely performed by its French-backed Senegalese partner, Toll Selection (toll being the Wolof word for "garden"). Toll Selection is exclusively devoted to produce growing and shipping. During the last season, SIDCA nominally shipped the same three commodities as did Toll Selection, but only one seventh of the volume.

Toll Selection is backed by the French brokerage, La Cours, which coordinates and guarantees a market for its output. Mr. Venot, who manages and directs Toll Selection, divides his year between similar operations with complementary export calendars in Senegal (Toll), Ivory Coast, and Cameroon.

Mr. Venot first came to grow and ship in Senegal in 1972. Until 1980 the firm operated direct growing schemes. He expressed a strong preference for the contract growing system, in contrast to the preference expressed by Mr. Ndiaye at SENPRIM (Profile 1). Venot emphasized, however, the difficulty in accounting for independent contract growers' use of inputs. Fertilizer is the most regularly diverted input, given its easy exchange for goods on the rural market. Thus growers tend to apply less than optimal amounts of fertilizer. Despite these difficulties he perceives the risks of direct growing worse still.

He argued that one of the reasons exporters are so dependent on green beans is that green beans are relatively better suited to sustaining the less than optimal growing practices under the contract system. While green beans and peppers can still be successfully exported under the contract farming arrangements, the shortcomings of the contract system preclude diversifying into other commodities that would fetch greater revenue. In other words, other commodities for which a stronger market may exist would require an estate growing scheme.

2. PRODUCT SELECTION

Over the years Mr. Venot has experimented with a variety of products, both under contract and under direct growing schemes. He has grown with varying degrees of success eggplant, squash, melons, tomatoes, and butter beans. Furthermore he followed with particular interest experimentation by a Chinese (Taiwanese, apparently) group in Senegal a few years ago. They found asparagus feasible, but too expensive to export competitively. Similarly he eliminated other possibilities. His conclusion is that under the current system he is largely confined to the beans and peppers that dominate Senegalese export shipments.

3. MARKET STUDY AND DEVELOPMENT

The special relationship that SIDCA/Toll Selection maintains with the La Cours brokerage in Paris simplifies its consideration of market alternatives. As long as growers find that it is still worth conducting business with SIDCA/Toll, there will be little pressure on Toll or La Cours to reorient their market thrust.

4. PRICE NEGOTIATION

Price negotiation is relatively straightforward. What Mr. Venot emphasized is that the problems come in when farmers are to deliver on the contracts at the end of the season. He claims that contract breaking is rampant if there is any slight additional profit to be made by selling outside of the contract.

The experience of the firm in attempting to redress the problems of broken contracts has not given them any reason for optimism. The one instance in which Toll Selection took a farmer to court they found no satisfactory result. Generally cases never arrive in court, since the defendant has no means to make a settlement if the verdict is against him.

When Mr. Venot was Director of ASEPAS some years ago, he proposed that an average purchase price be established. The purpose of this was to undermine the incentive to break contracts. The other exporters were not willing to lock in a single price.

The difficulties with contract sanctity in this quite stable price environment bode poorly for prospective contract farming schemes in which the commodity displays any price volatility whatsoever. Prices for the basic commodities they ship have evolved little in Europe over the years. Typically the fresh bean price at Rungis varies about one French franc (+/- 1 FF) from one year to the next. Senegalese export purchase prices tend to remain stable around 180 F CFA for "bobby beans" and 220 F CFA for string beans (filet).

5. LABOR ORGANIZATION

SIDCA/Toll Selection works with a combination of mini truck farmers with individual contracts, and groups of much smaller parcels organized through a chef de secteur. The twenty individual contracts vary between one and ten hectares. Each has its own well water for irrigation. Altogether they farm fifty hectares. Mr. Venot estimates that some 2500 small-scale growers contract with an unspecified number of chefs de secteur covering a total of about three hundred hectares.

6. COLLECTION AND PACKING

SIDCA/Toll performs the collection and packing functions as is typical with their own equipment in a central site. The innovation that Mr. Venot is introducing in an effort to earn greater value-added in Europe is a convenience pack for consumers. We visited the packing line he has developed and is now completing to produce ready-to-cook green beans.

The technique seems a good response to an otherwise stagnant market opportunity, given the homogeneity of exports and the freeze on allocated export space. The new pack utilizes a semi-permeable cling-wrap film that releases carbon dioxide while retaining condensation to avoid post-harvest produce shrinkage. The advantages of the innovation are that the green beans can be cleaned, prepared for cooking, and pre-weighed without sacrificing shelf-life time. The wrap is designed in fact to prolong the shelf-life for an additional six days.

7. GENERAL OPERATIONS

The company provides farmers with tractor tilling, seed, phytosanitary products, and fertilizer. The latter is provided on a limited basis, when it is provided at all, since it is not as crop specific and therefore tends to be converted into cash or otherwise diverted. The extent of their oversight is a weekly visit, on the average. SIDCA/Toll confines itself to beans and peppers for the export market. It is involved in growing potatoes and onions for the domestic market to a more limited extent.

8. PROBLEMS/SUCCESS

Soil depletion under the current contract farming system is impinging on productivity. The short-run response has been to

double the amount of seed applied to approach the expected yields. Mr. Venot cites the fertilizer dilemma as the number one problem. A related problem of trust and security is that of other stolen inputs or praedial larceny in more remote areas. At one time Toll/Selection had grown melons one hundred kilometers from Dakar. They were obliged to abandon the operation.

Freight is another problem. As one of the three largest producers, the firm feels constrained by the freight quota more than many. They have the capacity now to export some 1500 MT, while the SIDCA/Toll allotment is 1100 MT per export campaign.

An initial market success that has turned sour concerns the American market. SIDCA/Toll succeeded in penetrating the New York market. One out of three shipments, however, were being fumigated, irrespective of the condition of the shipment, based on the African point of origin. Fumigation greatly detracts from the market appeal of the beans. Mr. Venot conceded that there may well have been shipments infested with caterpillars from Senegal. The phytosanitary standards not only of the firm but also of the country as a whole and its reputation among the inspectors in the U.S. market were challenged.

9. FINANCIAL RESULTS

Currently SIDCA/Toll Selection would not be turning a profit were it not for the fifteen percent Government subsidy they receive on their F.O.B. price. In general the twenty individual contract truck farmers have been profitable, even in recent years. The 2500 farmers grouped under chefs de secteur have had their financial ups and downs, but have shown a profit with the subsidy from 1980 through 1984. Last season the firm suffered a financial loss due to the low productivity of this latter group, even after the subsidy payments.

10. PROGRAM INTERVENTIONS

The area of program support that Mr. Venot perceives to be the most fruitful for intervention in support of the contract-farming system lies in training the chefs de secteur to improve their extension approach. He emphasizes that even those who demonstrate considerable technical agronomic competence suffer from a lack of business acumen. He believes that on-farm training by American or other extension experts would improve their approach to maximizing profitability within their constrained resources.

PROFILE 3

COMPANY: SEPAM
ASSOCIATION: GEPAS
DATE: Thursday December 4
LOCATION: Ndiayelo, Rufisque
TELEPHONE: 36.44.69 & 36.11.81
SOURCE: Michel Gaffari, Manager

1. OVERVIEW OF START-UP

The Gaffari family entered the produce exporting business in the early 1980s, when contract farming became an option even for those who had not previously established their own farms. Had the family been in a position fifteen years ago to receive investment tax credits to purchase the otherwise prohibitively expensive farm equipment, they might well have pursued the direct farming option.

The family immigrated from Lebanon some fifty years ago, with less means than other exporters of Middle-Eastern origin. The father and son are both formally educated in France in business and agricultural engineering. Michel Gaffari, born in 1962, returned recently from a five month off-season internship with a broker in the Rungis wholesale market in Paris.

2. PRODUCT SELECTION

The SEPAM strategy has emphasized diversification of commodities. Last year they packed and shipped seven of the eight commodities exported, more than any other firm. They are the largest shipper of melons, with nearly forty percent of the national air shipments; and they were the only exporter of mangoes.

3. MARKET STUDY AND DEVELOPMENT

The firm has never performed a formal market study. The younger Gaffari considers that it would be cost effective if performed in-house. His task would be greatly facilitated by a microcomputer, which they do not feel they can afford. SEPAM appears inclined to consider a broad array of options whether evaluated systematically or not. Gaffari mentioned considering the possibility of avocados, but fears that intensive Spanish plantings precludes competitiveness in the European market. Also of note is the possibility of exploiting the niche of new crops

(e.g. cauliflower) that can sustain economic yields on soils depleted by excessive dependence on beans.

4. PRICE NEGOTIATION

SEPAM does not differ from other firms in its approach to establishing a prevailing price with growers through the respective chefs de secteur. Mr. Gaiffari emphasized that more important than the price in establishing the basis of a profitable transaction is the selection of those farmers who prove to be the most responsible.

Selectivity in choosing farmers with whom to contract is possible only to a limited extent, given the large number of growers. Some efforts can help marginally. First, the firm can endeavor to avoid those who have demonstrated their irresponsibility. The firm can scrutinize most closely the larger growers who contract as individuals rather than as a groupement or secteur. Lastly the firms can strive to select section bosses (chefs de secteur) who in turn show judgment in choosing growers.

5. LABOR ORGANIZATION

SEPAM contracts with groups of farmers through 25 section bosses. Mr. Gaffari estimates that these groupings account for some 2500 farmers. In addition they contract individually with a small number of independent melon growers. One grower operates a five-hectare melon farm. Last year this accounted for 45 hectares of melons, whereas this year the number will be considerably reduced.

6. COLLECTION AND PACKING

The growers who contract with SEPAM are scattered widely around the Niayes area. The company trucks continuously move around the area during harvest periods to assure regular pickups. Coordinating a more efficient collection schedule to economize on fuel and transport expenses is not possible given the distribution of growers, poor lines of communication, and the vagaries of harvesting schedules. Speed of pickup is the overriding concern in minimizing losses.

The SEPAM packing lines and cooling facilities are in good condition. The sorting equipment is relatively new and well maintained. Storage space is ample and the cooling equipment is consistent, even during peak periods.

7. GENERAL OPERATIONS

SEPAM provides the same basic inputs supplied by the other packers. They have no equipment to provide tillage or to otherwise become directly involved in farming. The only way in which SEPAM operations may differ notably from those of its competitors appears to be in the variety of commodities handled. Their contracting begins in September and activities extend throughout the Senegalese shipping season until alternative European supplies increase in the spring. Green beans, filet and bobby, which account for about half of SEPAM shipments (compared to 69 percent for all shippers) require relatively low levels of input and technical supervision. Tomatoes and melons, for example, require considerably more.

8. PROBLEMS/SUCCESS

SEPAM suffers principally from what Mr. Gaffari characterized as the level of indiscipline to be overcome. Using the example of string beans, they see no reason why it is not possible to achieve top grade ("extra fin") from half of all string beans delivered. Instead they receive only about fifteen percent (15 percent.) The problem, Gaffari explained, is that although the premium for top grade would make it more profitable for the farmers to deliver as much top grade as possible, growers continue to the largest (lowest grade) string beans possible. The grower bias persists that the greater the total weight, the greater the profit.

Another problem SEPAM perceives is the prohibitive expense of imported equipment. Firms that began in the business some years ago were able to receive an investment tax credit that entitled them to duty-free import for many years. Mr. Gaffari conceded that the 15 percent export subsidy was substantial, but noted that their subsidy will be reduced to 5 percent this year.

Mr. Gaffari believes that the problems of soil fertility will begin to take an increasing toll. The convergence of lower yields and lower subsidies furthermore implies that some of the companies exporting today may have to phase out their operations.

9. FINANCIAL RESULTS

Mr. Gaffari summarized the performance of SEPAM since 1981 as four bad years and one neither good nor bad. He characterized the results from seven years ago (1980-81) as excellent. It is not clear whether the losses were reported before or after calculating all subsidies. Had the last five seasons been so poor, it seems unlikely the firm would still be solvent in the

absence of any other highly profitable family business offsetting the loss.

10. PROGRAM INTERVENTIONS

Mr. Gaffari put forth no particular program interventions. He would be pleased to acquire the advantages of subsidized purchase of farming materiel, but saw no particular realistic basis for such a program.

PROFILE 4

COMPANY: SAFINA
ASSOCIATION: GEPAS
DATE: Thursday November 27, 1986
LOCATION: Sebikotane
TELEPHONE: 36.33.04 and 36.33.05
SOURCE: Mounir Filfili, President

1. OVERVIEW OF START-UP

SAFINA (Societe Africaine Industrielle et Agricole de Sebikotane) is the fresh produce growing and packing wing of a diversified family-operated agribusiness. The Filfili family raises livestock, farms extensively for local and export markets, operates a Dakar grocery "chain" (two stores), and owns various other food manufacturing enterprises. Approximately 60 percent of the organization's business is livestock related while the remainder is based on other agricultural activities. When asked what crops SAFINA grows, Mr. Filfili replied they grow all the crops grown anywhere in the area, with the exception of groundnuts.

The Filfili family is a Lebanese-Senegalese family that has been heavily involved in mechanized agriculture and food processing for over forty years. Mounir Filfili, the third generation in the family's diversified Senegalese companies, received his degree in management after three years of study in Lyon. Their involvement in the export of fresh produce is a logical extension of their vertically-integrated growing and domestic marketing business. SAFINA (or SAFINA/AGROCAP as this part of the family business was called until recently) supplies its "Filfili" stores in Dakar with fresh produce. These stores give a convenient outlet for sizeable (unspecified) volumes of fruits and vegetables that are not exported. This lends flexibility to the export side of the business while reducing transaction costs for the domestic business.

SAFINA is the only member of GEPAS that functions primarily as an estate grower. The company farms three hundred acres of which no more than a tenth has been contracted out. These are experiments with substantial individual contract farmers to determine to what extent contract farming can prove profitable and valuable as a means of risk reduction.

Mr. Filfili added that the Government of Senegal approached SAFINA to take over the Kirene and Baobab farms now operated by SENPRIM as BUD-Senegal was leaving. The Filfili condition of

acceptance was that all existing farmers be let go and that they would be able to start over anew. The Government refused.

2. PRODUCT SELECTION

Mounir Filfili terms the process of product selection speculation. They change their product mix more regularly than most, making use of their autonomous and mechanized means of production. As well as adjusting product mix in attempting to target market opportunities, SAFINA adjusts planting times in anticipation of favorable market timing.

3. MARKET STUDY AND DEVELOPMENT

SAFINA conducts its own market studies in response to requests from European clients of market information leads. Representatives of each of the European clients to whom the firm exports have come to Sebikotane to visit the operations in person. The firm's leadership seems vigilant in its efforts to discover new market windows. The company endeavors to stay in touch with production information from competing countries such as Egypt, Mali, and Burkina Faso, which can have considerable bearing on the timing of shipments and anticipated market price levels.

The COLEACP commercial market information service for Europe supplies elements that are useful in generating ideas when reviewed in conjunction with telex, telephone and personal contacts. Again, just as Mr. Filfili characterized the spirit of market analysis as one of speculation, he emphasized that ultimately business decisions are subjective and in response to feelings of how the market will move.

Thanks to its superior technical control over production, SAFINA is able to consider, evaluate, and put on the market new products more quickly than those firms who depend on contract growers. The contract farming system is cumbersome in introducing new cultivars and all the associated production and handling changes. SAFINA has, for instance, exported cherry tomatoes to New York and to Europe outside of the usual export calendar. Mr. Filfili notes that the official statistics reporting that he currently exports 780 MT annually do not capture his flows before the end of November, when the season ostensibly begins, and after May 31 when the season is considered over. SAFINA exported 320 additional tons during the period of unrestricted freight. None of the companies depending on contract farmers appear capable at present to take advantage of this expanded shipping season.

Mr. Filfili stressed that successful exporting, whether based on estate-farming schemes or on contract farming schemes, requires a high degree of market coordination. It is not enough to put a product in the market as if sending up a flare and hoping for a response. Coordinating production with marketing entails receiving a strong indication from the importer as to projected timing for the shipment and then to deliver on time.

As for local market development, the local market absorptive capacity is so limited that growth in this area is dwarfed at present by the productive capacity. The institutional trade (hotels and restaurants requiring the sorts of products exported to Europe) is very small in Dakar. Mr. Filfili reports that the institutional trade is saturated daily with deliveries as small as three hundred kilograms of produce. This represents approximately 55 tons of sales during the export season or approximately five percent of the export figure of any one of the most substantial exporters.

4. PRICE NEGOTIATION

SAFINA establishes its fixed buying price for its few individual contractors based on an average of the actual prices from the previous year. It places the important condition on its contractors that they must deliver the entirety of their crop to SAFINA. This is a standard condition but one that is more easily abused when the exporter is contracting indirectly with hundreds or thousands of farmers.

5. LABOR ORGANIZATION

SAFINA worked with four farmers under contract last season. Their acreage is summarized below:

<u>ACREAGE</u>	<u>STATUS</u>
9 HA.	Delivered
6 HA.	Defaulted
5 HA.	Defaulted
<u>3 HA.</u>	<u>Delivered</u>
23 HA. TOTAL	12 HA. TOTAL DELIVERED

Despite the high rate of default, the company has retained the two growers who delivered on their contracts and added a new contractor for the 1986-87 season. The new contractor will farm ten hectares. Thus the total acreage under contract this year is 22 hectares or about seven percent of the total area farmed by SAFINA.

Mr. Filfili believes that SAFINA may well be able to develop a reliable cadre of contract farmers whose importance can increase as a part of the total production portfolio. He proposes to do this by culling out the best farmers and by encouraging them, while simultaneously working to prevent defaulters from contracting with other firms in the future. The latter he attempts to accomplish by blacklisting those who default. This is only effective of course for farmers of a certain means, since it is not possible to keep track of the large numbers of the smallest-scale farmers. On the other hand, Mr. Filfili is pessimistic about the future achievements about contract farming as it now operates in Senegal. He believes that a sense of responsibility has not been inculcated in the smallholders who operate in groups through section bosses.⁵

6. COLLECTION AND PACKING

As in the case of SENPRIM, collection of farm produce is greatly facilitated by the centralized location of its fields. They transport the various commodities promptly to their packing facilities. The forced-nitrogen cooling system they utilize is a state-of-the-art technology.

7. GENERAL OPERATIONS

Mr. Filfili emphasizes the importance of recruitment in the success of a contract-farming scheme. The ability of SAFINA to be selective in screening potential contractors distinguishes it from all the other exporters who must rely on a large number of individuals with highly variable levels of ability and commitment.

SAFINA provides for the farmers a full range of inputs including extensive use of mechanized equipment. They benefit from a high degree of technical assistance. A full-time French agricultural engineer oversees the SAFINA estate growing operations during six months each year. His services were made available to SAFINA through a Chamber of Commerce program supported in part by importers in France. The contract farmers request technical assistance that SAFINA provides intermittently. At present this assistance is more a technical oversight than a complete extension service. This is partly because the contractors are based near Sandiara, seventy kilometers away. Mr. Filfili envisions a full extension service if his limited success with contractors continues to show promise. He

⁵ Mr. Filfili's words were, "Des groupements ne sont pas sensibilisés à la fidélité de contrat."

characterized the Frenchman's rapport with the Senegalese as excellent.

8. PROBLEMS/SUCCESS

The insufficiency of air freight constrains SAFINA considerably. The only opening in this situation is in the New York market. SAFINA did initially break into that market but has suffered from the fumigation practices. As expressed by other firms above, exporters complain that their shipments are subjected to fumigation, which increases costs and decreases the produce's value simultaneously, often irrespective of the condition of the actual shipment. The regulatory practices of APHIS create an effective barrier against continued penetration of the New York market. This problem is particularly aggravating to the firm since it claims to have sent prime quality produce. Mr. Filfili contacted USAID in Dakar to address this problem. Despite reassurances in person that a response would be forthcoming, SAFINA has not received any follow-up on the matter during the last three months.

9. FINANCIAL RESULTS

Without indicating the financial details, SAFINA indicated that the estate-farming business has proven to be quite lucrative. As for the contract farming experiments they have conducted over the past three seasons, the results have been less favorable. They have lost money all three years, but stressed that they have not lost a lot. He characterized their results as still very interesting, promising to become more profitable. The company considers their losses to date to represent the cost of learning the contract-farming trade. They are optimistic about their results during this current fourth season.

10. PROGRAM INTERVENTIONS

The only government intervention Mr. Filfili cared to propose was with regard to assisting in the improved clearance of produce into the American market. The company has little need for any assistance in its relations with Europe, but requires some sort of intervention to facilitate American sales. Any such program would include disseminating information about the regulatory practices while simultaneously improving communication between the regulatory agencies and the exporters.

PROFILE 5

COMPANY: SOEX
ASSOCIATION: GEPAS
DATE: Friday November 29, 1986
LOCATION: Quai de Peche, SOFRIGAL, SOPESEA Bldg.
Dakar
TELEPHONE: 21.42.22 & 21.29.30
CONTACT: Alassane Diallo, Director

1. OVERVIEW OF START-UP

The Diallo family businesses are founded upon their still active trade in "l'oiseaulerie," the capture and sale of live exotic birds for the export and domestic market. This has proven to be a highly profitable business employing some seven hundred hunters in West Africa. Incidentally, these hunters work under a contract basis for the company, receiving credit assistance in advance of the delivery of the live birds. The family subsequently diversified into fish packing and export (SOPESEA) and fresh vegetable packing and export (SOEX). Both of the latter firms are legal corporations, but Mr. Diallo described them as "quasi-familial" with only a token two percent participation from outside of the immediate family.

Allassane Diallo and his brother Amadou Diallo initiated SOEX in about 1971 as one of the first firms in the field. Their inspiration came principally from travel and observation of the European market in their search to diversify the family holdings. Allassane Diallo completed his studies in management in France during the same period in which the firm was being initiated.

2. PRODUCT SELECTION

SOEX initiated its business during the early period when contract farmers and spot-market sales first became a viable option in the 1970s. The never has had its own productive capacity. It is basically a trading company with sufficient funds to be a small-to-medium exporting firm. As such its product selection has been conditioned by the availability of a limited array of commodities for sale on the open market or easily contracted. The nature of the business tends to limit SOEX to exporting beans and peppers. In the past they have also exported mangoes and melons.

3. MARKET STUDY AND DEVELOPMENT

SOEX considers its product selection to be appropriately demand-driven. They base their feasibility analysis upon market information gathered during regular visits to Europe and their familiarity with the production possibilities and costs. These visits average about one visit every two months during the export season. An example of a recent market study is the case of eggplant. A Belgian client requested that they consider shipping eggplants. They were aware of the feasibility of production. SENPRIM has exported a few tons of eggplants recently. Upon further examination, however, SOEX found that they could not produce eggplants that would be competitive with Spanish eggplants available at the same time of year.

In the absence of promising new opportunities in Europe, SOEX is focusing its market development efforts on regional trade, notably to Gabon. They have previously succeeded in exporting melons to Gabon. Now they wish to expand their line to ten fruits and vegetables. Not all of these commodities are exported to Europe, but they are available in the domestic trade.

The firm also has its eye on New York as do so many. SOEX has succeeded in exporting green beans to the Hunt's Point terminal market in New York. They are now awaiting resolution of the current phytosanitary problems that have preempted further trade.

4. PRICE NEGOTIATION

The price established with growers before planting is based on an average of the prices during the same period for the preceding year. These prices have been relatively stable. The firm does have some flexibility in responding to market price changes throughout the season by virtue of its ability to buy on the open market as well as from its contract growers. For example, even if SOEX purchases beans from contract growers at a price that is not profitable for export, the firm may recover in part through open market purchases. Furthermore, their own resale on the local market can depress the local market price for strategic purposes to the extent that domestic market prices effect spot market prices for the export trade.

5. LABOR ORGANIZATION

Mr. Diallo describes the organization of production as forty percent spot market purchases, forty percent contract purchases

and twenty percent régie directe (estate grown). In light of his description of the enterprise it seems clear that they are not involved in estate growing, as it is properly construed. What he refers to as "estate-grown" is instead an unspecified arrangement with a mini-estate grower(s) who produces on their behalf, perhaps a trusted family friend working under a less formal contract.

The two-fifths of the export volume that SOEX organizes through contract growers is divided between 18 contracts. These contract are split between individual contractors and village groupements. The mini truck farmers can handle up to about four hectares effectively, though they range from two to five hectares. Those producers who are too small-scale to contract directly designate a spokesperson. The entire village group collectively commits itself to respecting the terms of the contract.

6. COLLECTION AND PACKING

SOEX supplies all the transportation and logistical support to assure that the product is pre-cooled and handled properly for export. The firm has several trucks that collect the produce and deliver it to the central packing facility for sorting. They perform no further processing functions.

7. GENERAL OPERATIONS

Contractees are selected principally on the basis of demonstrated yields. For example, a producer who can obtain a yield of sixty kilograms of beans for each kilogram of seed planted is considered a low risk. Growers who produce in the range of forty kilograms per kilogram of seed planted are not selected, or are dropped from the contract scheme. The farmers' perceived degree of responsibility and meticulousness are important considerations in the absence of definite, yield performance records.

Mr. Diallo emphasized that recruitment control is most important. In the event of default, the farmers generally have neither assets that can be seized nor other leverage that SOEX can exert to recuperate its loss.

8. PROBLEMS/SUCCESS

The Director referred to various difficulties they were having in starting up their exports to neighboring countries in the region. SOEX has been troubled by receiving and handling problems in Gabon. He complains of a lack of professionalism on

the part of the freight crews. Containers are left exposed to the rain, for instance. The clients complain and attempt to hold the exporter responsible. SOEX intends to contract with a Gabonese agent to represent their interests in the hope of remedying the problem. The other principal initial success that is currently stymied has been the export of green beans to New York. The firm is seeking representation there as well.

9. FINANCIAL RESULTS

SOEX did not provide detailed financial information. Mr. Diallo reports, however, that their only bad loss in recent years was in 1985.

10. PROGRAM INTERVENTIONS

Mr. Diallo declined to suggest any specific program interventions.

PROFILE 6

COMPANY: Etablissements Thierno Drame
ASSOCIATION: GEPAS
DATE: Thursday December 4, 1986
LOCATION: Km. 10, Route de Rufisque, Dakar
TELEPHONE: 34.01.30
CONTACT: Mr. Thierno Drame, President

1. OVERVIEW OF START UP

Thierno Drame started his career as a freight agent for a firm at the airport. He began working with a French exporter named Corneloup, one of the first involved in the Senegalese fresh export trade. Drame left the freight company in 1971 to work full-time with Corneloup. When Mr. Corneloup had a bad auto accident in 1979, Drame continued to operate the business successfully. Corneloup received good reports from their European clients. Gradually the business was sold to Drame. Corneloup returned to France, maintaining a small share of the business, yet continuing to facilitate Drame's relationship with importers in France. During the last season (85-86), however, Drame claims that Corneloup diverted 18 million CFA (\$55,000). He brought out the proces verbal indicating he has begun litigation in France.

2. PRODUCT SELECTION

The selection of the usual crops [haricots filet (string beans), haricots bobby (green or "snap" beans), and melons charentais (small "Cavaillon" type melons)] is a matter of having ironed out the problems with these now familiar commodities initiated by the original association with the French exporter.

3. MARKET STUDY AND DEVELOPMENT

Drame conducted no particular market study. Mr. Drame has found his best market from melons is March and April. He confines his operation primarily to green beans during the rest of the season. He has exported small quantities of peppers as well as mangoes to Brussels and Geneva. His source of market information is primarily his direct telephone and telex communication with Europe. He finds that the COLEACP quotes are inexact and of only limited value.

The output of all of Drame's contract farmers is intended for the export market. His local sales are exclusively taken from produce that does not meet export specifications. Rejects represent about 15 percent of overall production purchased. Thus he must dispose of some 70 MT in addition to the 400 MT he exports. These seconds are sold at a fraction of the price (15-25 CFA/kg) to gleaners or fed directly to livestock.

The firm has few market development plans or aspirations at this time. Mr. Drame has contemplated exporting cherry tomatoes.

4. PRICE NEGOTIATION

He calculates his breakeven price based on Rungis prices (the Paris terminal wholesale facility) including all transport and handling costs. (Ex. Beans CIF 14.24 FF = 712 CFA/kg including transport at 235 CFA/kg.) He attempts to get a feel for the price variance and to keep an eye on other producer countries to anticipate supply conditions, but this is very difficult in his position.

Basing producer prices on his projected revenue, he then negotiates with his chefs de secteurs. These section bosses have an interest in obtaining price levels that will stimulate maximum output. They derive their income from a 10 CFA/kg commission (ristourne) at the end of the season. Drame noted that advances disbursed against anticipated commission sometimes exceed the actual end-of-season revenue. Section bosses sometimes are left owing the company.

5. LABOR ORGANIZATION

Ets. Thierno Drame works entirely with contract farmers. These are divided between what Mr. Drame refers to as the "traditionnels" and the "projets." The projets, as he terms them, are individuals with up to several hectares who deal with him directly as individuals. The traditionnels are semi-traditional farmers of quite limited resources who form groups of fifty to sixty farmers under each "chef de secteur." The small farmers thus become subcontractors of sorts. They typically farm parcels of roughly 400 sq. meters. All of the farmers are men. Their ages vary widely.

Currently Drame has four chef de secteurs. In past years he has had as many as eight, but he finds that tends to go beyond the management capacity of the company. Furthermore he finds that too many contracts dilutes the sense of commitment or strength of rapport between Drame and his chefs de secteurs.

Ets. Drame undertakes no direct estate growing. He explains that the well situated land is publicly held (Domaine National.) Usufruct rights pertain, whereby those who have been working the land or their descendants maintain their right of access to the land and to its production. To make a direct growing scheme economical, he would need five to ten hectares at least. That is not available under the prevailing system and the current extent of truck farming already underway.

6. COLLECTION AND PACKING

The firm has one truck used to collect all produce. The growers are located in two production sites.

Mr. Drame operates a cold storage facility with a 30 MT capacity, though he rarely goes beyond 25 pallets (400kg, i.e., 10 MT.) Maximum storage time is three days before shipping beans. The firm owns a grading line to pack string beans.

The firm is currently working out the details of an arrangement whereby Drame will pack and store produce for GIPES (PROFILE 8.). This unusual arrangement (possibly by contract) will enable GIPES producer-exporters to enter the trade directly without relinquishing ownership of the product until it is sold on the European market. The deal has been arranged on a test basis through the personal intervention of Mr. Alioune Fall of SONABANQUE, former commercial representative for SEMPRIM and friend of Mr. Drame.

7. GENERAL OPERATIONS

Seeds, fertilizer, and credit are all supplied to farmers by the company. Mr. Drame showed his system of receipts and bookkeeping, which records all provisions received by each grower, although each chef de secteur is considered responsible for his group. Each boss is the source of all technical extension assistance. He claims he has no recourse over contract defaults other than to exclude the grower in the following season.

Payments to growers are made without immediately deducting pre-season financing. This credit is generally paid back only towards the end of the growing year.

3. PROBLEMS/SUCCESS

Thierno Drame perceives his overwhelming problem to be financing the purchase of all the contracted produce while attempting to finance the growth of the company. He reports his cash out-flow for the current season to follow approximately the following pattern:

CASH REQUIREMENTS FOR RAW PRODUCT PURCHASES

13 Million CFA	December
14 Million CFA	January
<u>18 Million CFA</u>	<u>February-March combined</u>
41 Million CFA	TOTAL purchase of produce

(This is the equivalent of some US\$125,000.)

Most of his credit comes from advances from importers. He claims that the interest paid is not explicitly stated, rather it is recovered by the importers before reporting the final sales price. Drame emphasizes the conflicts of interest engendered by financing from importers. Once the exporter becomes dependent upon a given buyer through financial debt, the exporter loses his leverage in negotiating prices. (As Mr. Drame put it, <<Tu n'es plus maître de toi-meme.>>) He is attempting to reduce his cyclical debt level for that reason. He has had to cut his output. This year he will be exporting to a reduced number of broker-importers with whom he has had the most satisfactory dealings. Previously he was diversified between buyers in Paris, Lyon, Marseilles, Geneva, and Holland.

9. FINANCIAL RESULTS

Mr. Drame reported the following results informally:

NET PROFITS (Millions of CFA)

SEASON	80-81	81-82	82-83	83-84	84-85	85-86
NET CFA	+13	+15	+13	+6	-16	*

(* This last season is the one involving the dispute in which he alleges M. Corneloup diverted 18 Million CFA. His financial results have not yet been determined.)

He cites natural risks still as the biggest determinant of his financial results. For instance he cites vulnerability to freeze conditions in Europe that sometimes delay landing, putting his product all at risk.

10. PROGRAM INTERVENTIONS

The two chief areas in which government intervention, especially foreign government assistance, could have a substantial impact would be: 1) Access to credit; and 2) Improved technical supervision of chefs de secteur.

PROFILE 7

COMPANY: SAAF
ASSOCIATION: GEPAS
DATES: November 26-27, 1986
LOCATION: Km. 3.5, Route de Rufisque, Dakar
TELEPHONE: 21.05.79 & 22.03.64
SOURCES: Aly Saleh, (Director) and Maguette Gueye
(Deputy Director)

1. OVERVIEW OF START-UP

The Saleh family has long operated STIMEX (Société de Torrifaction de Café, Importation/Exportation), a successful coffee processing company. This Lebanese-Senegalese family formed STIMEX apparently making use of Lebanese contacts in the Ivory Coast to buy coffee beans each year, which it then processes in Senegal. The Saleh family sought to diversify into other areas of agriculture, trade, or processing. STIMEX officially created SAAF (Société Agricole Africaine) in 1973 to take advantage of the opportunities in fresh produce exporting. Mr. Maturin, originally a broker in France, assisted SAAF in the start-up phase to establish ties to French importers of green beans and melons. Mr. Robert Duran, a melon importer in Cavailon holds a 40 percent share in SAAF.

Aly Saleh recently took over the reins of what has been an operation adrift, neglected by the members of the family and management more absorbed by STIMEX mainstream business. Mr. Saleh has recently left his private accounting practice to involve himself in the redirection of SAAF. Mr. Maturin remains involved in principal but in a less active role as the company has shrunk.

2. PRODUCT SELECTION

Business ties to Mr. Durand considerably influenced the start-up and product selection of SAAF. Last year SAAF exports were limited exclusively to shipments of melons. In better times, however, the company reported to have produced a broad range of exportables: tomatoes, cabbage, onions, new potatoes, watermelon, peppers, and melons. Furthermore SAAF imported onions and potatoes for sale in the domestic market.

3. MARKET STUDY AND DEVELOPMENT

Neither SAAF nor STIMEX undertook any market studies before launching the business. SAAF simply established agreements with French importers to purchase various commodities. The Director criticized the previous approach, noting that budgets were never drawn up, no trial exports were attempted, and results were never disaggregated to analyse performance. The original management took an entirely hands-off approach, providing financing, then turning the farmers loose to grow with minimal oversight.

Since 1973 SAAF has occasionally considered new market opportunities. Mr. Durand initiated an eight to ten hectare production scheme for garlic. Unlike all other exports, Mr. Durand has wanted to experiment with garlic shipments by sea freight.

4. PRICE NEGOTIATION

Mr. Saleh described price determination as a simple examination of an historical price trend. SAAF establishes its price based on a new price somewhat higher than the average over the past seasons.

5. LABOR ORGANIZATION

SAAF has arranged its operation into individual contracts ranging from three to ten hectares, totally thirty-five hectares. Growers have not organized themselves into any formal group, each operating independently.

In addition to the purchase of produce under contract with these small-scale truck farmers, SAAF purchases some of its export product on the open market. Mr. Saleh characterized the blend as sixty percent contract farmers and forty percent spot market purchases.

6. COLLECTION AND PACKING

Currently SAAF requires minimal packing facilities since they confined exports to melons. The company provides imported export-quality cardboard boxes so that each producer packs separately. I was unable to visit any previous packing facilities to assess whether they are in sufficiently good condition so the firm might relaunch its diversified packing operations without substantial investment. SAAF still operates a diesel generator to provide electricity for cooling the product once it is received from producers.

7. GENERAL OPERATIONS

SAAF determines its target acreage before approaching the individual contractors for discussions. The pool of possible farmers are the larger individual enterprises that spun off from earlier experience with either BUD-Senegal or SAFINA. All farmers were supplied during the season with the usual inputs, including fertilizer, seeds, and phytosanitary products. SAAF also provides tilling services to the farms.

8. PROBLEMS/SUCCESS

SAAF production and export deteriorated due to neglect since its promising start in 1973. The thirty-five hectares they have under contract normally should produce six or seven times as much tonnage as they exported last year. However, only one of the seven contractors respected his agreement to deliver melons. The company was an accomplice to its own failure to provide adequate agricultural extension. The extension system does not motivate the agents to exercise their responsibilities energetically.

9. FINANCIAL RESULTS

Mr. Saleh reports that SAAF has lost 190 million francs (190,000,000 F CFA, equivalent to more than half of a million US dollars) since 1973. Each year the parent company offsetting the loss expected that it would improve, relying on a different manager each year. Last year's loss was twenty million francs (20 million F CFA).

10. PROGRAM INTERVENTIONS

The management of SAAF perceives the greatest need for government reform in the area of improved agricultural extension. Growers lack the knowledge of agricultural practices necessary to operate an effective contract-farming system.

Mr. Saleh recommended that the government reexamine its policy of food imports. SAAF was successfully producing onions and potatoes for the local market. The bottom dropped out of that market when these commodities were imported, presumably sold below the local producer price through substantial subsidies.

PROFILE 8

COMPANY: GIPES
ASSOCIATION: GEPAS
DATE: Wednesday December 3, 1986
LOCATION: Interviewed at USAID-Dakar
TELEPHONE: 21.51.98 or c/o SONABANQUE 22.05.94
SOURCES: Cheickh Ngane, Sales & Promotion Manager
Simon Diouh, Agricultural Engineer
Alioune Fall, SONABANQUE GIPES Director

1. OVERVIEW OF START-UP

GIPES (Groupement d'Intérêt Economique des Producteurs/Exportateurs de Produits Agro-Pastoraux du Senegal) is an organization unlike any of the other exporters of fresh produce in Senegal. GIPES is different from all other members of GEPAS and ASEPAS in several significant respects:

- 1) It is comprised entirely of young well-educated producer/exporters;
- 2) The group was formed and supported through direct Government involvement.
- 3) GIPES has yet to export its first season, yet it is an official member of GEPAS and has received a sizeable initial export freight allocation.
- 4) GIPES operates under no farming contracts as such.

The group known as "Les Jeunes Maîtrisards" is, as the name suggests, a group of young Master's degree recipients. They banded together to form a g.i.e. (groupement d'intérêt économique) in 1985. The g.i.e. is the same cooperative legal entity introduced into Senegalese law of which GEPAS itself is one. The GIPES g.i.e. is devoted to direct production and export of fresh fruits and vegetables.

The six principals of GIPES received their advanced degrees in either European universities or the University of Dakar in fields allied to agricultural production and marketing. One of the two principals interviewed, for example, Mr. Diouh, completed his Master's in economics in Florence. The Government became aware that over one hundred Master's degree recipients representing all sectors of the economy had returned to the Senegalese economy only to face unemployment. The formation of GIPES is but one result of a broader program known as "Opération des Anciens d'Etudes Supérieurs." The Government has placed a

highly qualified official counterpart to act as technical advisor and to facilitate each group's penetration of its respective commercial milieu.

GIPES received 600,000 F CFA as foundation capital at its inception through SONAGA/SONABANQUE, a national development bank. The Director of the program from within SONABANQUE is Mr. Alioune Fall, former commercial director of SENPRIM.

2. PRODUCT SELECTION

As GIPES is just starting up, its members have selected the hardest of commodities, those that can sustain less than optimal physical handling yet still provide a modest profit margin in the export market. These are green beans (bobby, not the more delicate filet) and a type of pepper (piment suzette de provence). These choices provide the group with the greatest latitude as they begin the task of coordinating production with market. This precaution is particularly important given that they must contract out packing and cooling functions during their initial start-up.

3. MARKET STUDY AND DEVELOPMENT

GIPES representatives explained that they lacked the means to launch a formal market study of the sort they are capable of undertaking themselves in the future. They have had to depend to a considerable extent on the expert assistance of Mr. Fall in conceiving their marketing strategy and in establishing contact with European buyers. They are members of the COLEACP market information service. The group has visited Europe to make direct contacts. An exposition at the Salon International in Paris assisted them. Since then GIPES has received a visit from a Belgian broker interested in buying from them.

The crucial marketing achievement of their start-up period was establishing their air freight allocation (190 MT per season.) GIPES was able to base their negotiation with the Airfreight Committee on their productive capacity.

4. PRICE NEGOTIATION

As an autonomous group of grower-shippers, GIPES does not contract with its members. They negotiate only with the importers based on current prices in RUNGIS or elsewhere. The producer price does not exist separately since the production and marketing operations are vertically integrated within GIPES.

5. LABOR ORGANIZATION

Each of the six members of GIPES determines the size of his grower scheme based on the technical means at his disposal. The acreage varies from six to twelve hectares for a total of fifty hectares. Within GIPES the allocation of acreage cultivated shifts. The results of trial production have already shaped the distribution. The group will confront the situation in the future should important discrepancies arise after successive seasons. Each member is to some extent a competitor of the others, yet protects the interests of the group as a whole vis à vis other groups. GIPES presents a united front and a unitary marketing entity under one appropriately named brand label ("Master.")

6. COLLECTION AND PACKING

Initially all post-harvest assembly and storage will be subcontracted to Etablissement Thierno Drame (Profile 6). Alioune Fall arranged the agreement with Mr. Drame based on their long-standing professional friendship.

While this unusual arrangement of contracting with a competitor could lead to a conflict of interest, GIPES does not anticipate any. Again, the selection of commodities took this situation into account. By choosing not to produce string beans, GIPES obviated the need for a grading machine.¹

7. GENERAL OPERATIONS

GIPES is the only exporter that does not employ any contract farming per se. The firm plays a role in the contract farming system insofar as it sells produce on a spot market basis to exporters who experience shortfalls in contract farming production. The GIPES model is in fact an alternative to contract farming. All of the other growers farming more than a hectare but less than enough acreage to sustain an export company are obliged to contract with export companies. The g.i.e. mechanism in Senegal has permitted, in this case thanks to Government funding, an alternative to contract truck farming.

¹ String beans (haricots filet) are graded into three size categories, since the more delicate "fine" or "superfine" fetch a premium in the market. The sorting machine (calibreuse) represents a substantial additional investment. Bobby beans, or "snap beans" in American parlance, are a larger green bean that is sold in only one size category world-wide.

The GIPES representatives expressed that each of its members may be conceived of as holding a contract, but the contracts are their obligations to the g.i.e. Their advances and technical inputs come from the central organization, though each member company is somewhat different. Each has its own technical director in addition to the technical assistance offered to any member by Mr. Fall.

8. PROBLEMS/SUCCESS

The GIPES representatives relayed their problems and successes in terms of their actual production results. For example their potato yields suffered from inferior quality seeds and from the break down of a motor as an irrigation pump. They experienced considerable success with eggplants and with groundnuts. The latter are intended for the local market.

9. FINANCIAL RESULTS

The 1985-86 season was a trial period for all of the members. Despite variable technical success by different producers and different commodities, all six members suffered net losses.

10. PROGRAM INTERVENTIONS

As GIPES effectively increases the surface area under production for export, they consider that the airfreight limits imposed must eventually give way. These ceilings were penalties initiated by airline companies that are members of the Airfreight Committee after exporters failed to deliver the quantities of freight upon which they had previously agreed to deliver. GIPES therefore recognizes that before the Government can intervene in order to raise the freight ceiling, producers must demonstrate that they have increased exportable output to a higher sustainable level.

PROFILE 9

COMPANY: JARDIMA
ASSOCIATION: ASEPAS
DATE: Monday December 1, 1986
LOCATION: Km. 23, Route de Rufisque
TELEPHONE: 21.81.63 & 36.33.51 & 36.33.88
SOURCES: Michel Layousse, Financial Director
André Layousse, Administrator

1. OVERVIEW OF START-UP

JARDIMA is a subsidiary of the diversified family enterprise "Groupe Fauzie Layousse." The Layousse family immigrated from Christian Palestine to Senegal in 1887. Since those early years they have progressed from one link in the agricultural commodity chain to another. Initially the family prospered from groundnut production and marketing. They then moved into commerce, then transport, industry, and manufacturer representation for machinery and transport equipment. JARDIMA was formed in 1972 to seize the opportunity for production and export of horticultural crops. JARDIMA began first in Mali where, until recent years, the company has exported substantial quantities of mangoes. During the period from 1981-1984 JARDIMA substantially developed its tonnage to its present capacity now as one of the largest exporters in Senegal.

The corporate hierarchy of the Groupe Layousse adheres strictly to the family hierarchy. JARDIMA is the full-time responsibility of André Layousse, one of the younger brothers. The next eldest brother is Michel Layousse who is responsible not just for financial analysis of JARDIMA but of all the Groupe Layousse enterprises. He earned his doctorate in mathematics in France and continues to teach two hours a week at the University of Dakar.

2. PRODUCT SELECTION

Dependence upon the commodities available in the Niayes contract farming system limits JARDIMA to the usual array of crops. The company exports six commodities including small quantities of melon, okra, and tomato. The three leading horticultural export commodities in Senegal, string beans (filet), snap beans (bobby) and peppers, account for 99 percent of JARDIMA exports. They lament the excessive dependence on a handful of commodities and continue to consider alternatives. JARDIMA, like most of the exporters, is constrained by the availability of products and producer know-how so long as they rely on contract farmers.

3. MARKET STUDY AND DEVELOPMENT

JARDIMA perceived the task of market analysis as a very simple one. The limitations described in reference to product selection apply to all aspects of horticultural marketing. The firm remains vigilant to new opportunities, but sees little point in further formal market studies.

The company has considered adding two new commodities to its line, one that would require utilizing the usual contract farming scheme and possible alternative. Cherry tomatoes are becoming more interesting in the European market as are the number of farmers with experience in growing tomatoes or cherry tomatoes. An original alternative that would probably offer a new approach to product sourcing is papaya. The JARDIMA representatives did not discuss their analysis of the marketing potential for papaya.

4. PRICE NEGOTIATION

Once again JARDIMA emphasized that their procedures differ little from other exporters. The Layousses emphasized only that the result of the prevailing production and market pressures has been the gradual squeezing of profits to the point that, barring fundamental changes, the prices will prove insufficient to sustain the various exporters in business. They foresee no particular change in the process of negotiation, however.

5. LABOR ORGANIZATION

JARDIMA purchases about half of its volume on the open market and half from contractors. Those contractors are organized under forty-eight chefs de zone. In response to their need for increased oversight, the firm has subdivided some of their contract zones to increase the total number of contract agents to 62.

6. COLLECTION AND PACKING

JARDIMA is one of the only companies employing a packing and cooling system that compares well with the international industry standard. The other such firm is the estate-grower SAFINA (Profile 4.) For more discussion see Subsection 8, PROBLEMS/SUCCESS.

7. GENERAL OPERATIONS

Seven JARDIMA technicians oversee the entirety of their contracted zones. The company attempts to introduce marginal improvements that may gradually improve performance and maintain output in the face of diminishing soil fertility. Michel Layousse referred to inculcating a pride and improved approach to farming techniques as part of a long-term on-going effort by the extension staff.

JARDIMA attempts to involve the traditional political leadership in their contracting process as much as possible to enhance the sense of moral authority associated with the chef de zone and the sanctity of the contract. When a farmer defaults on a contract commitment, JARDIMA attempts to seize the crop. The amounts recovered generally do little to offset the losses but serve to increase the respect for the importance of the contract.

8. PROBLEMS/SUCCESS

The outstanding feature of the JARDIMA approach to contract exporting concentrates on improvement in post-harvest handling. Along with SAFINA, the big estate grower (PROFILE 4), JARDIMA operates one of the only packing and cooling systems in Senegal that compares well with the international industry standard. The system has reduced produce shrinkage considerably through its humidity control mechanism. Losses due to poor sorting have dropped dramatically. The Financial Director did not claim that the additional revenue from reduced losses has offset the additional costs of operating the new system. That calculation is not clear. The distinct advantage he sees financially arises from the additional flexibility the system offers in the timing of his shipments. Given the limitations of controlling the timing of contract farmers, this additional flexibility in the length JARDIMA can effectively hold its produce helps maintain a competitive edge.

9. FINANCIAL RESULTS

Mr. Dayousse did not report the JARDIMA financial results during the interview, but expressed their willingness to open their books should USAID or another institution committed to concrete results express a serious commitment to becoming involved in reforms of the current system. Mr. Layousse expressed skepticism that other firms would be willing to demonstrate the same openness in revealing their losses. The distinct impression left by the interview was of a dwindling opportunity for profit under the current state of affairs.

10. PROGRAM INTERVENTIONS

JARDIMA officials recommend an aggressive effort to open the New York market. Part of the growing malaise of the Senegalese horticultural export industry derives from the saturation of the French market. The Layousses would enthusiastically support any efforts to facilitate entry into that new market.

Simultaneously while striving to expand markets, JARDIMA would like to reexamine the overall contract-farming production mechanism. It is towards this end that the firm expressed its willingness to open itself to a formal dissection.

The Layousses emphatically invited the Director of USAID and the Ambassador or any other official to involve themselves in the review of the contract-farming system if JARDIMA or ASEPAS and GEPAS could first receive their commitment to reach some solution. They believe that another "forum" for discussion is irrelevant. What is needed is a commitment to act at the end of a considered appraisal of the situation. Without such a commitment the firm believes further information gathering is pointless.

PROFILE 10

COMPANY: SENIMEX
ASSOCIATION: ASEPAS
DATE: Wednesday December 3, 1986
LOCATION: FIDAK Exposition Site, Dakar
TELEPHONE: 22.32.75 c/o Ousmane Ndiaye
SOURCE: Abdoul Rany Ben Geloune, President

1. OVERVIEW OF START-UP

Mr. Ben Geloune is a businessman who ventured into the export trade in recent years. His own career began as a prominent national athlete over twenty years ago. He moved on to journalism and coaching, then insurance and the transport business. He has only been active in his current trade since the early 1980s. SENIMEX reported export volume is minute, the smallest of any firm with only twelve tons last year, or only slightly more than one percent of the volume of the largest export enterprises. Mr. Ben Geloune claims the actual volume was in fact twice as much, though this is still less than the smallest exporter.

Mr. Ben Geloune's activities in the field have emphasized his role as a promoter. He is currently the President of ASEPAS. (André Layousse of JARDIMA is Vice-President, even though his firm dominates ASEPAS volume overwhelmingly.) Mr. Ben Geloune serves also as an Administrator of COLEACP representing Senegal for the European based market news service.

2. PRODUCT SELECTION

SENIMEX at present confines its limited activities to green beans. The proportion of the two types of beans principally reflects the availability of the two at the time of purchase. The acreage that Ben Geloune contracted did not produce according to plan.

3. MARKET STUDY AND DEVELOPMENT

Mr. Ben Geloune is constantly looking to new market opportunities so that he can diversify from the green bean exports upon which SENIMEX has been dependent during his start-up period. He is currently considering exotic fruits in which he has been involved in European tastings and promotion (e.g., soursop and zapote.) Furthermore, he is considering the market

for medicinal herbs and extracts, especially with a view to the Eastern European and Asian market.

Other market opportunities that Mr. Ben Geloune believes merit further study by SENIMEX and other exporters include technological advances in sea-freight storage. He is currently examining the prospects for inter-African freight. Furthermore he considers the opportunities for onion and potato storage for local and regional markets. This appears to provide a promising avenue for an otherwise static market supplied by the current contract-farming system.

4. PRICE NEGOTIATION

SENIMEX behaves as a price-taker. The firm elicits producer prices from various growers. A high degree of price uniformity tends to prevail. Mr. Ben Geloune then calculates if his cost structure enables him to turn a profit based on export price expectations. In some cases he pays a premium above what other exporters are offering.

5. LABOR ORGANIZATION

SENIMEX held one grower contract last year, apparently an individual grower rather than a chef de zone representing a variety of growers. The contractor defaulted. Mr. Ben Geloune reports that he took the case to court. His actual exports were purchases made on the open market, including a substantial portion through his ASEPAS colleagues at JARDIMA.

6. COLLECTION AND PACKING

The only fixed installation SENIMEX requires is his input supply storage in the Castor Market area of Dakar. The actual sorting is done by hand by women in a rural area near Thies and a second area near SENPRIM in the Patte d'Oie area of Dakar. Mr. Ben Geloune then arranges for a truck and a scale to pick up the loads. The only cooling facility he utilizes is the airport pre-departure facility.

7. GENERAL OPERATIONS

The preceding headings summarize the basic operations that comprise the business of SENIMEX. In addition to providing basic inputs to one contractor, Mr. Ben Geloune explains he has at his disposal as technical advisor a friend who retired from a large-scale rice production company.

8. PROBLEMS/SUCCESS

Mr. Ben Geloune perceives the airfreight limitations to be a key problem compared to the productive capacity in place.

Furthermore he alleges that those firms that are entirely Senegalese work at a disadvantage to those exporters who have a French presence. He claims that Air France has a pro-French bias that influences the determination of allocation by the Airfreight Committee.

Mr. Ben Geloune favors the development of a national label and promotion group. He undoubtedly feels that small exporters cannot easily gain the market recognition larger companies achieve. Maintaining a high quality product at a competitive price is not enough. SENIMEX export shipments were among the few that the phytosanitary service at Yoff International Airport characterized as "Good."²

9. FINANCIAL RESULTS

Mr. Ben Geloune claims to have lost money during these first few years of operation, without specifying the magnitude of the losses. He singled out 1983 as a fairly good year financially relative to the rest.

10. PROGRAM INTERVENTIONS

Mr. Ben Geloune favors the establishment of a CICES (Centre International de Commerce Extérieur Sénégalais) branch in Europe. He notes that the smaller exporters are all Senegalese of Senegalese origin. While the larger firms do not perceive an important role for CICES, Mr. Ben Geloune contends that the smaller national firms would all benefit from a united effort to promote the produce of Senegal in foreign markets.

² The four exporters characterized by this highest quality of produce were: SENPRIM, SAFINA, JARDIMA, and SENIMEX. SENIMEX's rating may be attributable to the fact that JARDIMA sold a considerable portion of SENIMEX's volume to them. Both JARDIMA and SAFINA possess the most advanced cooling and packing facilities in Senegal. SENPRIM quality is favored particularly by the centralized structure of the growing schemes situated near the packing and storage facilities. The remaining exporters were classified as "Assez Bon" (good enough) or in one case simply "Assez."

CHAPTER 3

CONTRACT FARMING
IN IRRIGATED RICE PRODUCTION:
JAHALY PACHARR PROJECT, THE GAMBIA

by

Judith Carney

PART I

GENESIS OF CONTRACT FARMING, FORM OF CONTRACT, ORGANIZATIONAL STRUCTURE--JAHALY PACHARR SMALLHOLDERS IRRIGATED RICE PROJECT

INTRODUCTION

In 1984 the government of The Gambia implemented the Jahaly Pacharr irrigated rice project, which is based on contract farming. While Jahaly Pacharr is specifically designed to increase domestic rice surpluses and secure cereal import-substitution, its broader significance is as a prototype for future irrigation projects that will come into production with the development of the Gambia River Basin. Through irrigation The Gambia seeks to solve its agrarian crisis, which is characterized by dependence on one export crop, groundnuts, to finance milled rice imports. In the full development scenario, the production of cash crops year-round will enable The Gambia to diversify and expand its export crop sector.

The government's plans, however, require major adjustments in the farming system. Double cropping necessitates fundamental changes in household production dynamics, which evolved from adaptation to a short, five month growing season. Moreover, the state's objective to commoditize agricultural production will require a transformation of peasant farming strategies from a mixed cash/subsistence cropping pattern into simple commodity production for the market (cf. Bernstein, 1977; 1979; Friedman 1979). At this stage in the Gambian agricultural trajectory, contract farming provides the instrument by which the state seeks to effect the necessary changes in the form and social relations of production.

The Jahaly Pacharr irrigated rice scheme is the first Gambian agricultural project successfully implemented with the new production form. Now in its fourth year of operation, the project has led to many changes in smallholder farming strategies. The purpose of this study is to identify the changes taking place in order to analyze the impact of contract farming on the organization and form of peasant production. In particular, this paper addresses four primary concerns: 1) Jahaly Pacharr's role in regional political and economic development; 2) its effect on inter- and intra-household resource access and allocation; 3) the project's impact on the social organization of labor in local agricultural production; and 4) the risk, growth, and equity consequences of project development.

This study is divided into three major parts. The first covers the genesis of contract farming in The Gambia, which provides a background to the form of the contract implemented in Jahaly Pacharr. Also discussed is the project's organizational structure, particularly the manner in which production, input distribution, and marketing take place. The first section concludes with an examination of the project's equity goals, which were compromised in the original land distribution. Part II is an analysis of the three major agrarian impacts of contract farming in the Jahaly Pacharr project: 1) a skewed generational and gender bias to local resource control and access; 2) changes in household production dynamics that have conditioned labor availability and recruitment; and 3) the emergence of labor markets in the project area. These consequences are in turn linked to the evolution of new forms of peasant production in the project. Part III of the study is an examination of contract farming's impact on national, regional, and local economic growth. The project's role in generating backward and forward economic linkages to the irrigated rice sector is reviewed as well as potential risks to project farmers and the management. Summary remarks on the impact of contract farming on economic growth and rice import-substitution brings Part III to a close. Finally, this study of contract farming in food crop production raises several issues of theoretical interest to contract farming research, which are identified in the Conclusion.

This paper is the result of research conducted in the Jahaly Pacharr project area during its first year of operation, 1984, and follow-up fieldwork sponsored by the Contract Farming in Africa Project, Clark University/Institute for Development Anthropology Cooperative Agreement on Human Settlement and Resource Systems Analysis (SARSA) (funded by the Africa Bureau, AID).

PART I:

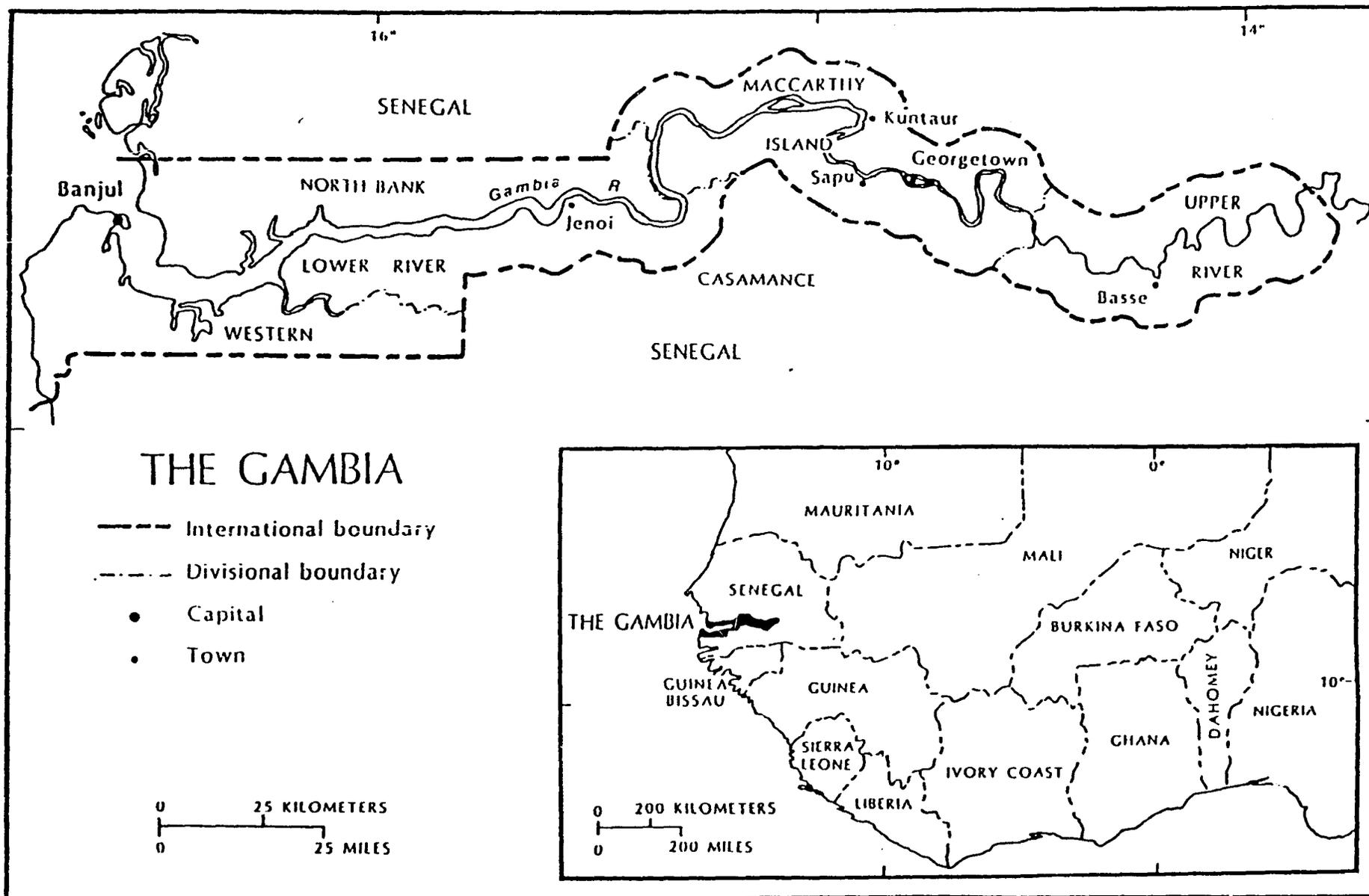
GENESIS OF CONTRACT FARMING, FORM OF CONTRACT, ORGANIZATIONAL STRUCTURE--JAHALY PACHARR SMALLHOLDERS IRRIGATED RICE PROJECT

GENESIS OF THE JAHALY PACHARR PROJECT

The Jahaly Pacharr project, owned and operated by the Gambian government with Dutch technical assistance, is a result of the accumulated government experience in irrigated rice production during the span of several decades. Gambian irrigation projects have been organized under two primary development principles: small-scale, owner-operated perimeters and large-scale tenant farming projects.

Most of the production forms currently implemented in the Jahaly Pacharr project were first developed in the Colonial Development Corporation's (CDC) abortive Gambia Rice Farm, which operated from 1950 to 1958. The project leased 4000 acres in Jahaly swamp near Sapu (Map 1) for development of an agricultural scheme. Plans called for a highly mechanized operation to cultivate potential export crops by irrigation during the dry season, while supplemental irrigation would enable production of a wet-season rice crop. Of more consequence for production objectives was the CDC's plan to use wage labor for the nonmechanized operations, weeding and harvesting. But the failure to establish a reliable irrigation network limited the scope of the project to a wet-season operation and therefore rice cultivation, which necessitated changes in its labor arrangements. The CDC was to discover that during the rains it had to compete for labor when cultivators were already busy with their own crops. Moreover, labor availability was further limited by the fact that rice in The Gambia is traditionally grown by women. Soon after project inception these factors led to a revised strategy in which the CDC sublet rice areas to the dispossessed, original female cultivators. In return for land preparation, plowing, and harrowing, local women seeded, weeded and harvested the rice. From the harvest women were able to retain two out of every five bags of paddy. But this arrangement also was terminated amid accusations that women were under-reporting their rice yields (Carney 1986). In its place, the CDC established tenant or contract farming, where in exchange for land preparation and inputs, women agreed to repay the project a fixed amount of paddy. The strategy had three distinct advantages over the preceding arrangements: i) management was guaranteed a fixed amount of rice production; ii) agricultural risks were assumed by the cultivator; and iii) the benefits of

Map 1 The Gambia, Administrative Divisions



project participation were directly linked to an intensification of each woman's labor. The contract farming arrangement was terminated when the project became unprofitable. As a result, the lease was suspended and the rice land returned to the original female tillers.

Though the colonial government failed to establish an irrigation project, the idea gained momentum with independence in 1965, when government officials began an active search for bilateral funds to develop reliable irrigation systems. Between 1966 and 1980 it succeeded in securing Taiwanese, World Bank, and mainland Chinese funding for a succession of three irrigation projects that developed nearly 2400 hectares. The projects were premised on quite different assumptions from the CDC scheme. They aimed to achieve production goals by substituting a large-scale, highly-mechanized operation for small-scale perimeters, which primarily relied on hand labor. The specific goal of the projects was to develop a second cash crop by commoditizing the food crop, rice. Rice import-substitution goals were, however, linked to double-cropping.

The small-scale perimeters phase of Gambian irrigation development had several consequences of direct bearing to the Jahaly Pacharr project. First, they were premised on the availability and intensification of family labor.⁽¹⁾ Second, the projects were implemented without attention to the gender-base of traditional rice cultivation. The farming principles were introduced only to men. Nor were they developed with an understanding of the dynamics of land use and labor obligations in the traditional farming system. Consequently, women were disenfranchised from their traditional rice lands and marginalized from rural development opportunities, a process that had a negative impact on their economic independence and well-being (Dey 1980). Moreover, male household heads often claimed the perimeters as their individual plots, which affected labor availability in two ways. First, when a plot is designated as an individual field, a Gambian farmer does not have access to unremunerated family labor.² Second, the limited use of the perimeters resulted from male labor conflicts with the groundnut cash crop during the rainy season. As a result of these factors, the small-scale perimeters never achieved high cropping intensities and fewer than ten percent were double-cropped. In addition, unreliable deliveries of key inputs like diesel, fertilizers, and spare parts for the pumps contributed to perimeter abandonment. By 1983 only one-third of the land originally developed even remained in production. Thus, although the small-scale irrigation projects did undoubtedly contribute to improved subsistence security among participating households, their failure to generate significant marketable surpluses made them a failure from the perspective of government officials.

New hope for the irrigation sector developed in 1982 with the promise of multilateral funding for implementation of an irrigated rice project at the Jahaly and Pacharr swamps.(2) The credit package enabled the Gambian government to pioneer a production-labor arrangement designed to overcome the problems of the earlier schemes and to guarantee two key objectives: i) double-cropping and ii) the supply of rice surpluses for the national market. The mechanism by which these objectives are to be realized is through contract farming.

THE NATURE OF THE CONTRACT FARMING AGREEMENT IN JAHALY PACHARR

The Jahaly Pacharr project is in many ways a return to the ideas first advanced in the CDC's Gambia Rice Farm. First, it operates on lease land. Although termed a smallholders' project, it is owned and operated by the Gambia government, which has secured a 21-year renewable lease with local cultivators through their representatives, the village headman, elders, and district chief. Second, Jahaly Pacharr is also a large-scale scheme, operated under a centralized management that organizes the cropping calendar and pump-irrigated water deliveries. Third, Jahaly Pacharr has been established with a contract-farming production arrangement.

But the Jahaly Pacharr project is likewise indebted to key principles advanced in the small-scale perimeters. Most of the farming operations are not mechanized but rely on hand labor. Further, the Jahaly Pacharr project is premised on the availability of family labor. The original land allocation was loosely based on available household labor units for irrigated farming. The project has established a fixed amount of paddy production for seasonal loan repayment, thereby making a household's surplus production for food needs and/or sale dependent on labor availability, particularly its capacity for intensification.

Jahaly Pacharr, however, departs from the ideas of previous projects in two fundamental ways. To ensure marketable surplus production, the project ties plot usufruct to: i) double-cropping; and ii) the full repayment of production loans immediately after harvest. Although a written contract does not bind producers to project guidelines, cultivation practices come under surveillance of the project management through its agricultural extension agents. The failure to crop or to repay the production loans to the government's buying and marketing cooperative for paddy can lead to eviction from the project. The threat of usufruct loss, then, is the key mechanism by which the

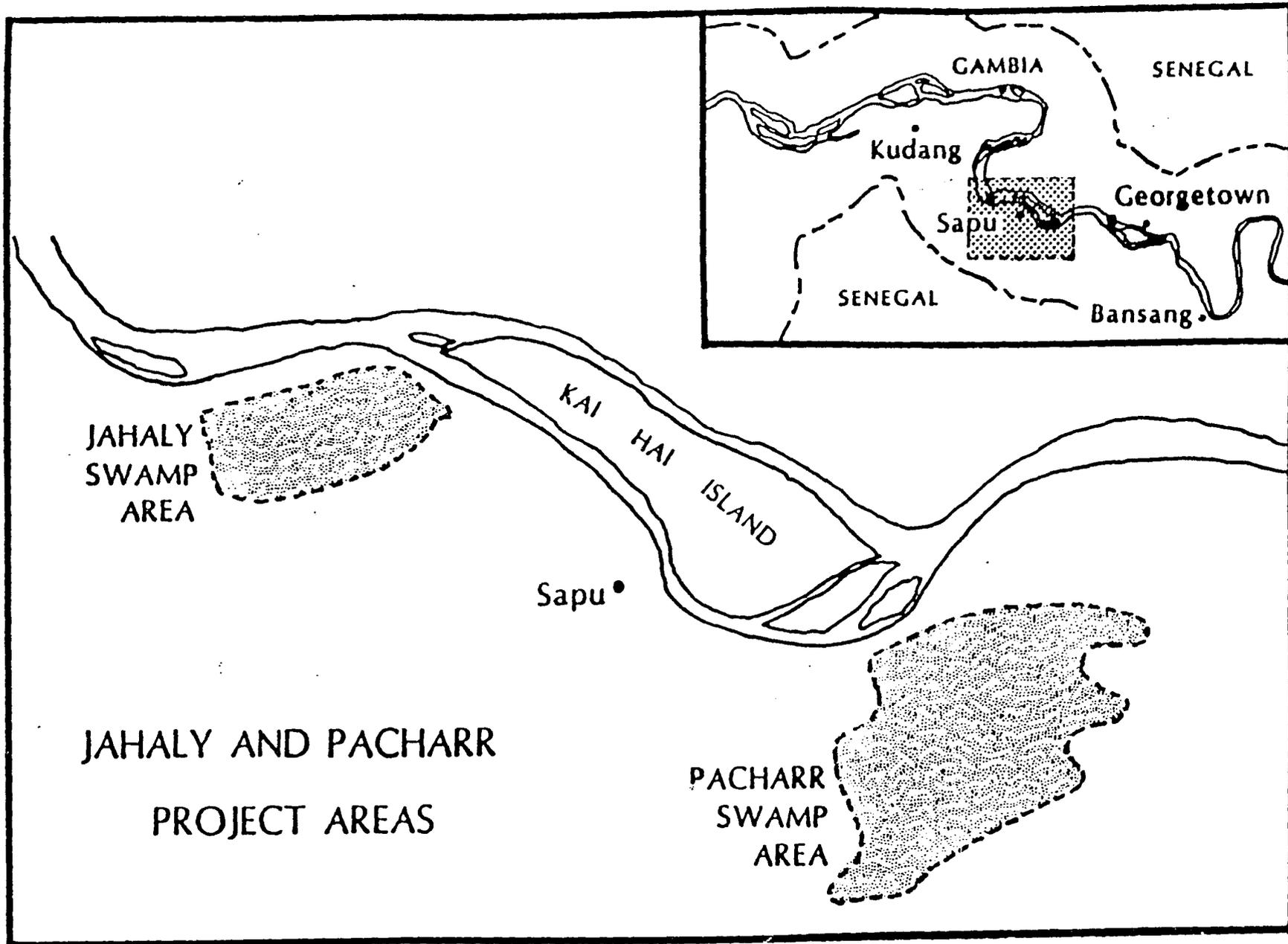
project management seeks to exert a basic labor discipline among producers.

ORGANIZATIONAL STRUCTURE OF JAHALY PACHARR

The Jahaly Pacharr irrigated rice project is located near Sapu, 280 kilometers east of Banjul, The Gambia's capital (Map 1). Named after the two large swamps developed into irrigated perimeters (Map 2), the project encompasses a broad geographic sweep. When completed in mid-1987, Jahaly Pacharr will involve over 2,000 rural households from 70 villages and directly affect about one out of every eight Gambians.(3) Nearly 1500 hectares of rice land are developed in the project, of which 560 are pump-irrigated, more than 700 tidal-irrigated (one-third can be double-cropped), and 200 hectares targetted for improved rainfed cultivation. With the Jahaly Pacharr project the government of The Gambia hopes to generate 7000 tons of marketable paddy, which would reduce milled-rice imports into the country by 25 percent.

Farmers in the Jahaly Pacharr project utilize a Green Revolution biochemical production package, which relies on high-yielding, short-duration seed varieties, fertilizers, and pesticides. While the management provides mechanical land preparation, most of the farming operations are performed by manual labor utilizing rudimentary hand tools. Table 1 summarizes the division of farmer and management responsibilities for project cultivation activities.

For the purposes of water deliveries and extension, the rice perimeters are organized in ten-hectare blocks. Each block, in turn, is divided into two-hectare plots, which are subdivided into the fundamental field unit, a 0.5 hectare plot. The project management unit organizes and establishes the calendar for cropping activities for each year. In general, a cropping cycle spans 120 days with the dry season crop established in early January for a May harvest and rainy season planting begun in June for a November-December harvest. The cropping cycle for pump-irrigated plots is particularly critical since mechanical land preparation must take place in the interval between planting seasons. Delays in the cropping calendar carry two significant risks. First, the wet season harvest should be completed by December so that the crop is not threatened by the cooler December temperatures that sometimes drop to 15 degrees centigrade. Second, a delay in the dry season crop's harvest poses major problems in the farming system of local cultivators. A fundamental objective of the project is to develop rice as a cash crop in addition to continued cash cropping on the uplands. The failure to harvest the irrigated rice crop by early June poses serious labor bottlenecks with establishing the groundnut crop at the beginning of the rains. Figure 1 presents the ideal



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Scale: Distance between two swamps = 7 kilometers

TABLE 1

Responsibility in Pump-Irrigated Plots, Jahaly Pacharr Project

MANAGEMENT

1. Water delivery.
2. Dry land preparation, field plowing and land levelling.
3. Wet land preparation, "puddling" or pre-irrigation field saturation.
4. Maintenance of project infrastructure (irrigation canals, drains, pumps, roads).
5. Providing the technical and agronomic assistance to farmers to carry out irrigation farming operations.

FARMERS

1. Pre-irrigation field activities.
2. Nursery bed preparation.
3. Sowing nurseries.
4. Irrigating nurseries.
5. Manual plot levelling.
6. Transplanting.
7. Weeding.
8. Fertilizer applications.
9. Harvesting.
10. Threshing.
11. Delivery of paddy to project cooperatives.
12. Maintenance of irrigation canals and bunds.

COOPERATIVES

1. Provides timely supply of inputs: seeds, fertilizers, and paddy rice sacks.
2. Purchases paddy from farmers and arranges its storage and distribution to government rice mill.
3. Keeps records of farmer loan repayment for the project management.

Source: JPQPR 1986

pump-irrigation cultivation schedule for a typical year. Besides setting up the annual cropping calendar, the project management unit, through five major departments, centralizes all extension, agronomic and credit decisions (see Figure 2). These are relayed to farmers through two major conduits: i) the land allocation committees; and ii) the contact farmers selected for each ten hectare irrigation block. Individual farmers do not represent themselves to the project management directly, but through the land allocation committees that they elected at project inception. All production inputs are organized through the Gambia Cooperative Union's two marketing and buying agencies. The cooperatives are also in charge of receiving producers' paddy, which is used for repayment of the seasonal credit. While the government of The Gambia sets the producer paddy price, the charge of the seasonal credit package is established by the project management in conjunction with higher-level government officials. The cost of the package is annually adjusted to changing producer paddy prices and inflation. During the first four years of the project, the seasonal credit for pump-irrigated land has been calculated at about one-third of the average, expected harvest (4.0 tons per hectare). Table 2 presents the credit charges on the project's plots for the 1986 wet season.

GROWTH AND EQUITY OBJECTIVES OF THE JAHALY PACHARR PROJECT

Jahaly Pacharr was conceived with several economic, political and social objectives. It was designed to expand irrigated rice production among farmers in a zone with a great deal of experience in tidal, pump, and rainfed rice production. The introduction of a biochemical production package combined with higher producer paddy prices promise yield increases as well as improved rural incomes.(4) In fact, a fundamental reason for farmers' initial acceptance of contract farming production strictures was the opportunity the project offered to become rice self-reliant.(5)

Although the Mandinka and Serrahuli are the region's primary rice cultivators, the government has aimed to broaden politically the project's economic impact by including villages representing all major local ethnic groups.(6) Because the disproportionate benefiting of village male elites had contributed to the failure of previous irrigation schemes, the Jahaly Pacharr project was established with two primary social objectives designed to broaden rural labor participation: 1) to extend the benefits of irrigation farming to the rural poor; and specifically, 2) to target women. These objectives were succinctly summarized in the project donors' appraisal report:

"In assisting the Government [of The Gambia] to reach its goal of rice self-sufficiency and to improve the lot of the rural poor, the project makes special reference to women, who traditionally have been the major rice growers under arduous swamp conditions" (IFAD 1981).

Lease Land, Social Objectives, and Plot Distribution

This section examines the manner in which the project's equity objectives were compromised. The failure to carry forth the stated social goals was linked to the outcome of the local political alliances that were forged to deliver popular support for the Jahaly Pacharr project. As discussed above, the key to contract farming rested on tying land access to production goals. But the state needed to gain control over farmers' land, held in customary tenure. In the absence of a law that permits the nationalization of land for public interests, the ability of the state to impose contract farming depends on securing a lease from local farmers. The Gambian government mobilized popular support for the Jahaly Pacharr project by doing two things. First, farmers were promised World Food Program milled rice supplies to cover subsistence needs while the perimeters were under construction. Second, government officials recruited the support of traditional elites to legitimize the project to farmers. The strategy was successful and led to the negotiation of a 21 year lease. But the lease was made renewable, which means the government must sustain local support for the project. This is a political consideration that local elites have been able to manipulate to their advantage.

Their prominence socially and politically enabled traditional elites to dominate the land-distribution process. Plot awards sometimes reflected political clientalism more than the two fundamental criteria mandated by the donors for the land allocation: i) the inclusion in the project of the original rice-farming families; and ii) the award of pump-irrigated plots to women. The results of the land distribution can be summarized as follows: (7)

1. Most, but not all, original tillers were accommodated in the project.
2. Men, not women, gained control of pump-irrigated land.
3. In the plot distribution traditional rural elites--

village chiefs, elders and lineage heads-- benefited more than other villagers.

4. Within the farming household, the power and position of the male compound head was strengthened over dependent male and females.

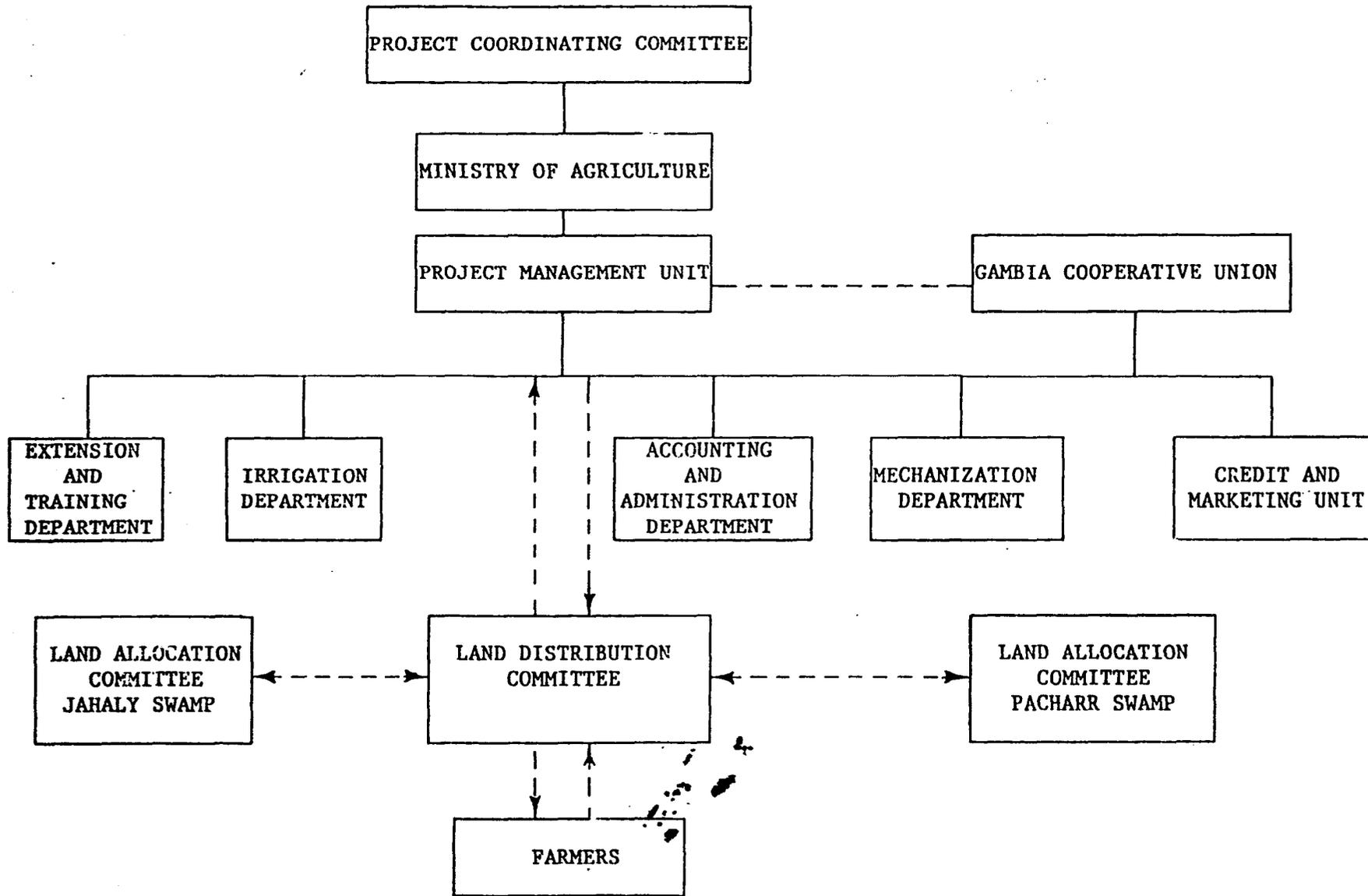
The socioeconomic, generational, and gender bias of the land distribution reflected prevailing hierarchical relations in the traditional social structure. But the land distribution in Jahaly Pacharr actually strengthened the existing power structure. The matrix of political and economic interests that were key to implementing contract farming seriously compromised the project's equity objectives.

The first of these, improved opportunities for the rural poor, was partially achieved. Most original tillers' families were included in the plot distribution, but those representing the more resource-poor immigrant lineages seldom obtained access to more than one pump-irrigated plot, which was observed more frequently with founding settler lineages. In a survey of one typical project village, these status differences in resource control are brought into relief. Table 3 shows that founding settlers, 25 percent of village households in Wellingara, obtained three-fourths of the pump-irrigated plots in the land allocation. Although all village households did receive plot awards, none of the founding settler families had to share a plot while about 40 percent of immigrant lineage families did. Among such farmers, the plot cannot provide for more than subsistence needs once paddy for loan repayment is deducted.

In other villages, the land rights of immigrant lineages became secondary to the political objectives of influential committee members who used the plot distribution process to strengthen their local power base. This process was particularly observed in two more commercially-oriented villages of the area, (8) where new cultivators were brought into the project at the expense of accommodating original tillers. Most of these plots were awarded to local businessmen, traders and Department of Agriculture personnel, and little attention was given to availability of family labor.

The land distribution committees most notably failed to achieve the second social objective--the award of pump-irrigated plots to women. In the first land distribution, very few women's names were listed as plot "owners." While government officials made no effort to reverse the process, IFAD, the principal donor, did. Men's names were removed from plot ownership, and the land was registered in the names of female household members. While this action was praised widely as an instance of gender equity in rural development (New African 1985; International Agricultural

Figure 2. ORGANIZATIONAL STRUCTURE OF THE JAHALY PACHARR PROJECT



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Source: JPQPR 1986

Note: Appendix 2 lists the functions and objectives of each department.

TABLE 2

Jahaly Pacharr Project: Charges for Wet Season 1986 Credit Package

<u>Pump-Irrigated</u>	<u>Costs (dalasis)</u>
1. Water fees	225
2. Land preparation	186
3. Seeds (30 kg @ D 1.5/kg)	45
4. Fertilizers (2 bags compound + 2 bags urea)	<u>216</u>
	Total 672 (about 11 bags of paddy)
 <u>Improved Rainfed</u>	
A. Tidal Irrigated	
1. Water fees	120
2. Land preparation	156
3. Seeds	45
4. Fertilizers	<u>165</u>
	Total 486
B. Rainfed	
1. Land preparation	156
2. Fertilizers	<u>108</u>
	Total 264

Source: PMU, Jahaly Pacharr Project, 1987.

TABLE 3

Distribution of Pump-Irrigated Perimeters Between Founding
and Immigrant Settler Lineage Households: Wellingara

<u>Classification</u>	<u>Number of Households</u>	<u>Hectares</u>	<u>Percentage Control</u>
Founding settlers	8	5.8	25
Immigrant settlers	32	17.2	75

Source: Fieldwork data 1984.

Development 1985; African Business 1986), the redistribution proved to be cosmetic, changing only the name on the plot--not actual resource control (Carney 1986).

In sum, the Jahaly Pacharr land distribution failed to reverse male control of irrigation schemes in The Gambia and acted to strengthen the existing gerontocratic and gender basis of local resource control. This resulted from the outcome of political alliances that enabled the state to negotiate a lease with local farmers, upon which contract farming depended. While the outcome of the process generated conflicts between households over the skewed land distribution, the key arena of struggle developed within households over women's access to rice land. The next section discusses the way in which labor needs for contract farming posed a structural obstacle to the donors' goals to award women irrigated land. This serves as a framework for examining the labor- and land-use patterns that have evolved in the project during the last four years.

Crop Rights, Labor Obligations, and Irrigated Land

Three factors operated to make it unlikely that the irrigated plots would have come under female control. The first was the insecurity of tenure in the project, specifically the fact that failure to meet the contract farming production goals could abrogate the tiller's cultivation rights. Second, plot allocation was loosely based on household labor reserves, which implied the need for more than one woman's labor to sustain cultivation, thereby necessitating some arrangement to draw on other family members' labor. Third, conflicts over women's rights to land had accompanied previous rice development projects in The Gambia and failed to establish a precedent for women's individual ownership rights to developed land. (9)

Men resisted plot awards to women, claiming initially that in the case of divorce, the land would be alienated from the household. Since residence in The Gambia is virilocal and divorce common, when marriages dissolved plots in the project would circulate out of a household's control. The project management mollified their concerns by deciding that a divorced woman would retain plot control only if she remained in the community. If the woman remarried outside the village, the plot would be reallocated to another female member of her ex-husband's household (JPQPR 1984). While the clarification upheld women's usufructuary rights to land, it also opened up the interpretation that the household had ultimate control over project plots.

Another important factor encouraging household, rather than an individual's, plot control was linked to the labor needed to carry out double-cropping on pump-irrigated plots. Preproject calculations estimated more than 358 adult days to perform the irrigated cropping operations--more than one individual's labor (EUROCONSULT 1980). The Jahaly Pacharr project was predicated on the availability of family labor for irrigation farming, particularly its capacity for "self-exploitation." Thus, a plot could not be cultivated solely by one female. Nor did customary labor obligations give women access to supplemental family labor.

The Gambian farming system operates simultaneously with many forms of tenure, which carry specific crop rights and labor obligations. On the most general level, land may be owned either by a household or by an individual. While the cases of actual individual ownership are less frequent, they are important because the owner may alienate the land as s/he desires. In the majority of cases, however, land belongs to the extended family and cannot be removed from the kin-residence group. Within the classification of household land, there is an important secondary distinction. Dependent males and females have the right to usufruct of individual plot(s), over which they control the crop's disposal rights. This they are given in exchange for providing labor on household fields, which are used to produce food crops. When a field is designated household land, the organization of labor, crop storage, and disposal comes under the male compound head. He is also the only household member who has the right to family labor on his individual fields. The goal to ensure family labor for double-cropping, as well as the fundamental structure of the farming system, thus conflicted with the social goal to award women pump-irrigated plots. From the first cropping season, the project's pump-irrigated perimeters were claimed as household land. But the change in intra-household labor relationships engendered a number of conflicts that were to have important ancillary repercussions.

PART II

CONTRACT FARMING AND HOUSEHOLD PRODUCTION DYNAMICS

IMPACT OF CONTRACT FARMING ON HOUSEHOLD PRODUCTION DYNAMICS

The Jahaly Pacharr project provides an illuminating example of the impact of introduced technological processes on a particular farming system with specific land use and labor rights. It also demonstrates the consequences of contract farming on household production dynamics. In Jahaly Pacharr the need to secure labor for double-cropping and the labor-intensive cultivation regime triggered a major evolution in traditional rights of access to land and labor within farming households.

This section identifies the primary changes that occurred.

Variations in Land Use of Jahaly Pacharr Plots

The designation of pump-irrigated plots as household land enabled the household head to make claim to family labor. Intra-household conflicts emerged, however, over labor obligations for two cropping seasons. As we have noted, the social structure of crop rights and labor use in the Gambian farming system had evolved for a single cropping season, but the project's double-cropping requirement caused household heads to demand the customary obligations for two cropping periods. Conflicts were less marked during the first dry season crop but mounted in the 1984 rainy season when upland groundnut fields were planted. Male dependents diverted labor to their individual groundnut fields, but female rice growers, who had lost their private plots with project development and did not have upland fields, shouldered most of the work burden on the pumped plots. This change in the social organization of family labor had several repercussions, which reflected ethnic and intra-household variations in conflict resolution.

The dominant ethnic group in The Gambia as well as the project area is the Mandinka, among whom the primary food crop, rice, is traditionally cultivated by women. Mandinka women grew rice both as a subsistence and cash crop. Unlike the other major

ethnic groups in the project area, Mandinka women seldom had upland groundnut fields. Consequently, project development brought a loss of their individual crop land as well as their income-earning possibilities. Once the pump-irrigated plots came under control of the household, women immediately focused on demanding some form of compensation for their labor.

Their first objective was to gain control over the tidal-irrigated plots, which were being developed for rainy season cultivation. Unable to get the project management to make a decision in their favor, women organized on the village level for their interests. This did have some positive results. When a household obtained plots in both pump and tidal areas, the women usually were able to get usufruct to the tidal-irrigated land. But if a Mandinka household had to share a pump-irrigated plot, the tidal area also usually remained household land. Thus, the more resource-poor Mandinka households have generally not been able to accommodate female demands for rice land. In these areas the impact of the project on women's economic independence has been markedly negative.

Patterns in Serrahuli villages offer some interesting variations from those observable among the Mandinka. Serrahuli women also cultivated rice in the preproject period. A major difference between them and the Mandinka, however, is that Serrahuli women usually only relied on rice for food-crop needs. Groundnuts were cultivated for cash purposes. Thus, women's more diversified economic base, particularly usufructuary rights to upland cropping areas, strengthened their bargaining position in the household. This prevented household heads from depending primarily on unremunerated female labor in the pump-irrigated plots. As a consequence, Serrahuli women usually receive harvest gifts for their labor, and the tidal plots are often considered women's individual fields.

The Fula and Wolof villages, which seldom cultivated rice in the preproject era, also are characterized by a more diversified economic base for women, who grew groundnuts as a cash crop in the preproject era. As with the Serrahuli, the fact that women as well as men have individual groundnut fields improved the bargaining position for the women of these ethnic groups in household labor obligations. This in turn has resulted in a more balanced gender structure to the labor in rice cultivation. Among the Fula and Wolof, rice cultivation has become appended to their overall farming system. Since rice cropping is generally a new agricultural crop and these villages have not received a great deal of irrigated land, both pump and tidal plots are generally considered household land, primarily used for subsistence, and the labor is shared between men and women.

A rough estimate of control over the tidal plots among all ethnic groups suggests that about 50 percent are considered

women's individual fields, but the women have secured only usufruct, not ownership, rights to such plots, and the plots are often shared, which means that even if good yields are obtained they may be divided between several women. Moreover, women's tenure security rests on marriage. If she divorces her husband, she loses plot usufruct.(10)

Plot Designation and Control of the Investible Surplus

Struggles over land use were but one consequence of the impact of the Jahaly Pacharr project on household-production dynamics. Another was struggle over control of the investible surplus. Although the pump-irrigated plots were designated household land in order to secure family labor for cropping, the new biochemical rice production package had important secondary implications. Rice was no longer simply a subsistence crop. Instead, surpluses were being generated. In the past the term "household fields" implied food crop land, and the produce was not sold. The Jahaly Pacharr project, however, is premised on generating surpluses, while contract farming specifically necessitates that part of the harvest be sold. When household heads invoked the term "household fields" to secure family labor on the pump-irrigated plots, internal struggles developed over the distribution of the plot's surplus. This became a second arena of conflict between men and women in the project.

A major impact of the Jahaly Pacharr project has been to dramatically increase the power and income possibilities of the male household head. While the designation of the pump-irrigated plot as a household field made family labor available for cultivation, the manipulation of resource categories has had differential benefits to household members. First, it has centralized crop rights and labor under control of the household head, usually the senior male. Throughout the project area, the male household head stores, distributes and sells the paddy. Second, it is he who controls the decisions on the use of the investible surplus. Third, though designated a household field to secure dependents' labor, the plot is actually functioning as the individual field of the household head. Thus, project development has enabled senior males to increase their income-earning possibilities at the expense of other household members. The meaning of this for household resource control and accumulation is not insignificant. The price the Gambian government is offering for paddy has climbed steadily during the last decade (Table 4) and rice is becoming an attractive second cash crop in The Gambia. Yields on the project's pump-irrigated plots have averaged over 5.6 tons per hectare, while the sale of paddy to repay the seasonal credit has been fixed at about 1.2 tons. Given the low preproject per capita income (US \$130) and the value of a ton of paddy (945 dalasis or US \$124), the surplus represents a significant increase in local incomes.

TABLE 4

Producer Price for Paddy Rice 1972/73-1986

<u>Year</u>	<u>Dalasis per metric ton</u>
1972/73	153
1973/74	242
1974/75	309
1975/76	353
1976/77	397
1977/78	441
1978/79	463
1979/80	492
1980/81	492
1981/82	510
1982/83	510
1983/84	560
1984/85	560
1985/86	600-800
1986/87*	945

* Since 1984 the price has remained constant.
Differences are due to devaluation.

Source: GPMB Annual Accounts, Banjul, USAID

Control of pumped land by senior males in Jahaly Pacharr demonstrates several points of potential bearing on future contract farming schemes in The Gambia. First, given the social structure of the Gambian farming system, projects like Jahaly Pacharr do not necessarily lead to a distribution of economic benefits within the household (Carney 1986). In fact, the scheme is strengthening the economic position of the household head over other family members. Second, contract farming can trigger important changes in resource use and crop rights within the household, which suggests that certain family members may have an interest in limiting others' access to resources. Third, the reinterpretation of customary land-use categories to achieve control over labor is setting forth many intra-household conflicts, among generations and between men and women. These consequences may seriously limit the capacity of Gambian contract farming schemes to effect an intensification of household labor. As we shall see in the next section, variations among households in conflict resolution have conditioned the availability of family labor. Finally, the control of the investible surplus by one sector of the household, senior males, makes its use all the more critical to the project's productivity goals and local agricultural growth--particularly whether it is used to promote productive or unproductive accumulation (Berry 1984).

Some preliminary information on patterns of use of the investible surplus was gathered in Wellingara in January 1986. One-third of the interviewed village households were asked to present an investment portfolio of surplus paddy sales. Table 5 presents the results. Household heads spent their incomes on six main categories. Less than half those surveyed invested in the project's production loan package, which enables producers to purchase donkey carts and agricultural implements on credit. More invested in female labor, demonstrated by widespread recognition of an increase in polygamy since project inception and, specifically, in the number of new wives taken by senior males. Consumer items such as bicycles, radios, and cassette players also figured as major household purchases. Although these figures cannot be extrapolated to provide a general characterization of project households, they do indicate some important local trends and future research directions. If the centralization of control of the investible surplus is used to promote unproductive patterns of consumption that are designed to defend prevailing control over resources, the ability of projects like Jahaly Pacharr to transform agricultural production and deliver their productive potential may be seriously constrained.

Conflict Resolution and the Availability of Family Labor on Pump-Irrigated Plots

In addition to changes in resource control and use of the investible surplus, the third major impact of contract farming on household production dynamics is on the social organization of family labor. This section examines the manner in which the Jahaly Pacharr project affected the availability of household, particularly female, labor for pump-irrigated cropping operations. In particular, the discussion focuses on the impact of internal conflict resolution on the capacity of the household economy to intensify its labor. Conflicts that developed within project households reflected both differences between ethnic groups as well as variation among families. The resolution of these conflicts conditioned differences in the availability of family labor between project households.

Since the inception of the Jahaly Pacharr project, officials have been closely monitoring the use of family labor, particularly the gender structure of key farming operations. Estimates of the amount of time required to perform certain agricultural tasks as well as the type of family labor to do so are available in Figure 3. With this data, project officials have sought to identify labor bottlenecks and changes in the sexual division of labor. By the end of 1986, the management was generally pleased with the project's impact on the regime of the household economy, specifically the intensification of family labor. This was not the case, however, with many Mandinka households. In fact, project officials were generally quite discouraged with labor patterns among the Mandinka, the preeminent rice cultivators, but regarded as the worst farmers.(11) Besides failing to perform irrigation activities on schedule Mandinka households have high rates of labor hire, which the management attributes to two attitudinal factors: i) the lack of a profit motive and ii) a greater desire for leisure. This discussion penetrates beyond surface behavioral descriptions to examine the origins of differences in current labor patterns among the project's ethnic groups.

On a general level, conflicts over family labor availability on the pumped fields are less likely to characterize the project's Wolof and Fula villages largely due to their smaller land allocation and upland cropping bias. All able family members labor in the fields, though the Wolof, who remain primarily groundnut farmers, employ day workers if there is a labor shortage. It is among the traditional rice cultivating groups, the Mandinka and Serrahuli, where the effects of contract farming are most visible. They received larger village land allocations based on previous tillage, and project development has triggered several adjustments in the organization of cropping

FIGURE 3

Observed Labor Input and Sexual Distribution of Labor of the
Various Agricultural Activities in the Jahaly Pacharr
Pump-Irrigated Plots

<u>Activities</u>	<u>No. of Labor Days per Plot</u>	<u>Activity Done in:</u>	<u>Labor</u>	
			<u>Men</u>	<u>Women</u>
Manual land preparation	2-4	1-4 days	50%	50%
Transplanting	15-20	1-7 days	20%	80%
First weeding	10-15	3-5 days	20%	80%
First top dressing	1-3	1 day	80%	20%
Second weeding	10-15	3-4 days	20%	80%
Second top dressing	1-3	1 day	80%	20%
Harvesting	15-20	4-5 days	80%	20%
Manual threshing with empty oil drum	<u>40</u>	7-8 days	50%	50%
	94 - 120			

Source: PMU data, Jahaly Pacharr Project 1986

strategies, which has affected household labor. In Serrahuli villages, where there is a tradition of remunerating females for their agricultural labor, (12) women's work on the pump-irrigated plots is rewarded with seasonal harvest gifts of paddy and/or usufruct to a tidal plot. Additionally Serrahuli men, unlike the Mandinka, formerly sometimes helped women during labor bottlenecks in rice cultivation. Women's rights to upland plots also led to a lessened dependence on female labor in the pumped-plots and a more balanced gender work distribution in Serrahuli households. Thus, the development of contract farming has brought both men and women into the irrigated rice fields and led to an intensification of family labor. The Serrahuli, the ethnic group with the largest households, seldom use hired labor in the project. These patterns are quite different among the Mandinka.

As we have noted, Mandinka women were the most seriously affected by development of the Jahaly Pacharr project. Their rice fields were incorporated into the project, yet they had difficulty gaining control over the developed land. Moreover, they did not have access to upland cropping areas like women in the other ethnic groups. These circumstances weakened Mandinka women's bargaining position in evolving family labor arrangements but facilitated efforts to intensify their work burden within the household. Moreover, expectations for women to perform most of the rice cropping operations had historical precedence. Since the nineteenth century the Mandinka farming system has responded to economic commoditization by intensifying the use of two basic resources: tidal swamps and skilled female labor (Weil 1973; Carney 1986). Women's labor in lowland swamps enabled men to specialize in upland groundnut cultivation, while rice was grown only by women in low-lying swamps. The gender relations of production have been ruptured with contract farming and development of the Jahaly Pacharr project. The expansion of the market economy through the commoditization of the food staple has caused fundamental disturbances in Mandinka production relations. As in the past, the locus of Mandinka intra-household struggles is over control of female labor in rice areas.

In the first year of the Jahaly Pacharr project, Mandinka women provided most of the family labor on the pump-irrigated plots, as was foreseen by the project management:

. . . the women are better than men as far as transplanting is concerned and they are also better than men as far as working in the water . . . so quite frankly we expect a lot of labor from women, more so than from men. (13)

But the women were not always successful in securing access to tidal plots or in being remunerated with harvest gifts. The development of the project, their awareness that its premise was to award them land, and their subsequent failure to obtain rice plots, deeply politicized Mandinka women, which was summarized by one, Mariama Koita, in a BBC documentary on the subject:(14)

"It seems this project is just like the Chinese one when we suffered before. We aren't going to put up with that again. . . . I have this to say to you men. We women aren't going to accept the way we have been treated in the past. We were asleep then. But now we are awake."

After the project's first year of operations, Mandinka women decided to exert pressure on household heads to improve their economic position in the project. Specifically, they demanded compensation for their labor on the irrigated plots. Their request varied from village to village and was usually related to whether or not they had usufruct to tidal plots or swamp rice land outside the project. In one village where all the rice land had been absorbed into the project, women demanded 25 percent of the product.(15) The next section discusses the three main changes that have occurred in female labor availability among Mandinka households during the last two years.

LAND ACCESS, FEMALE LABOR, AND THE TRANSFORMATION OF PEASANT PRODUCTION

The threat of female labor withdrawal from the irrigated plots in early 1985 was to lead to significant changes in the relations of agricultural production in the project's Mandinka villages. This section has three objectives. First, it charts the principal transformations that contract farming brought about in the form of household production. Second, it demonstrates the manner in which these changes affected the availability of family labor and the ability of the household head to effect an intensification of dependent members' labor. Third, it links the evolution of new forms of peasant production to the resolution of these intra-household conflicts.

Preproject Production Forms

Prior to development of the Jahaly Pacharr project, area farmers produced for both subsistence and cash needs. While most households were involved in the market economy through sale of groundnuts, agricultural household reproduction was mediated through the traditional social structure rather than through the process of commoditization. Household reproduction occurred primarily through direct non-monetary ties to other farm units rather than through a context of high mobility of land, labor and credit, which describes simple commodity production. Thus, on a gradient of forms of peasant production from subsistence agriculture to simple commodity production, the mixed food/cash cropping complex characterizing preproject agricultural strategies is referred to as independent household production. (16)

Though direct reciprocal ties for renewal of the means of production and subsistence have not been severed in the project's Mandinka households, certain ruptures are now visible that are changing the form of peasant agriculture. In some cases differences in access to land among family members has led to female labor mobility, and wage labor markets have developed. In other households rudimentary sharecropping arrangements have emerged. Thus, contract farming has set forth changes in land, labor, and credit, which are liberating the factors of production from mediation through the traditional social structure. This is an essential step in the evolution of peasant farmers into simple commodity producers.

The main impact of contract farming has been on the household labor process. Given the long-range political importance of Jahaly Pacharr as well as limitations on the government's ability to take control of rural land, the project was aimed at smallholder farm families. Productivity goals were tied to the availability and intensification of family labor. Since land usufruct is linked to repayment of the seasonal credit and the project has the right to evict farmers from the land for failure to repay it, farmers must command supplemental labor to meet production goals. But contract farming has precipitated structural changes in the organization of household production, which has conditioned labor availability. These changes are particularly visible among the Mandinka.

The primary historical responses among the Mandinka to commoditization of the farming system have been: i) a restriction on women's access to upland plots and ii) a reliance on female labor in lowland rice cultivation. Contract farming in the Jahaly Pacharr project has caused Mandinka households to make yet another adjustment to agricultural commercialization. With the

transformation of rice from a food to a cash crop, for the first time women's access to rice plots has been restricted. While the lack of alternative lowland areas has provided the context for household heads to exert a greater control over female family labor, women have struggled to defend their traditional resource and crop rights within the farm unit. Thus the accommodation to economic change has been rife with intra-household conflicts between senior males and dependent females. These factors were chiefly responsible for the types of changes that occurred in production relations in the project's Mandinka villages.

Mandinka households have responded to women's demand for labor compensation in one of three principal ways. The variations are primarily due to differences in control over resources, particularly land, between farm units. The three major types of accommodations in Mandinka villages to women's demands are:

- 1) Women provide labor as needed on the pump-irrigated plots and receive compensation by gaining the usufruct to and control over the crop rights of the tidal irrigated plots.
- 2) Women provide labor as needed on the pumped plots, but since no tidal areas are available for cultivation, they are compensated in paddy, receiving a fixed share of the pumped-irrigated plot's yield for their labor.
- 3) Women seldom or never provide unremunerated labor in the pumped plots. The household head does not give labor compensation in paddy or tidal plots.

The first adaptation has already been discussed. Such households are usually resource sufficient, controlling adequate rice land for both subsistence and cash needs. Their reproduction continues to be based on the renewal of reciprocal ties for production and subsistence, and the form of agricultural strategies remains characterized by independent household production. Given the large numbers of villages participating in the project and the fact that tidal land is still being developed, it is difficult to estimate the overall percentage of Mandinka households in this category. In the one village extensively surveyed, Wellingara, about 25 percent of the farm units remain independent household producers. The next section concentrates on the impact of the latter two adjustments, which are leading to new forms of peasant production in the project.

Rudimentary Sharecropping Arrangements

Among the Mandinka households that do not have much irrigated land, there have been two major adaptations to women's demand for labor compensation. In the first of these, female family members have been able to negotiate a rudimentary sharecropping relationship with the household head. In exchange for their unrestricted labor on the pumped fields, women are given a fixed percentage of the plot's yield. They are also relieved of the need to provide rice for household needs. This adaptation thus rewards women for their overall labor productivity. The percentage of households involved in such arrangements cannot be specified, however, since the fieldwork period was too short to conduct an extensive survey in the project's numerous Mandinka villages. In the one village systematically analyzed, Wellingara, sharecropping was found in about 20 percent of the households. The percentage of the yield women receive under such arrangements varies, usually from 10 to 25 percent. On an irrigated plot with average productivity women received paddy valued from 150 to 500 dalasis per year (US \$20-\$66), although this varied widely and was correlated with overall plot productivity.

Female Labor and Wage Labor Markets

In Wellingara most households, however, were not able to offer women compensation for their labor. This was particularly true in resource-poor households that share an irrigated plot and barely meet subsistence rice needs, but it was also observed in households that had adequate land and produced surpluses for sale. In these households women now seldom provide labor on the fields. When they work on the pumped plots, payment in cash or paddy is demanded. Consequently, female labor withdrawal has had a number of repercussions on household production.

First, it has led to an intensification of male labor in the fields. But given the high rate of polygamous marriages in the area, men cannot make up for the loss of skilled female labor through an intensification of their own. Thus, the project management's claim that Mandinka males are spending more time in the rice fields than in previous years and doing some of the cropping activities formerly associated with female labor (transplanting and weeding) is indeed true, but rather than an indication of overall intensification of family labor in rice cropping, it is a response by male household heads to the loss of female labor.

A second repercussion of female labor withdrawal is that many Mandinka farm units are having difficulties adhering to the

project's cropping schedule, which is often responsible for lowered yields. This is particularly evident during the rainy season when men plant their groundnut cash crop. The need to recruit external labor is not only linked to problems in the cultivation cycle but is also the basis for the project management's oft-repeated remark that the Mandinka are the worst farmers.

These two factors have conjoined to restructure household production relations, a third major consequence of female labor withdrawal. This has led to a great increase in the use of hired labor in Mandinka villages. The evolution of the changes that have taken place during the last two years will be outlined for one Mandinka village, Wellingara.

Even in the project's first year most Mandinka villages were unable to complete the irrigated cropping activities without recourse to external labor. Only 25 percent were able to rely solely on family labor (Carney 1986). From 1984 through 1986 the percentage doing so has remained quite consistent (Table 6). But the changes during the last two years in female labor availability have led to an increase in the number of activities for which hired labor is employed. Table 7 shows that in 1984 most labor hire was for transplanting and weeding, while in 1986 this has expanded to include the other two key labor bottlenecks, harvesting and threshing. This is where the withdrawal of female labor has had a noticeable impact on household production. Table 8 presents a rough estimate of the seasonal costs of hired labor for the farm unit. Annually the majority of households spend between US \$28 to \$84 for hired labor, which costs approximately three to ten percent of an average plot's annual production (5.6 tons per hectare, see Figure 4).

Although there has been a great deal of male migration into the Jahaly Pacharr project since the early stages of its development, (17) most of the village labor hire is female. In Mandinka households where women have been denied access to land and therefore withdrawn their uncompensated labor, their primary economic activity is wage labor in the rice fields. Here, direct reciprocal ties for access to the means of production have been ruptured, and women now depend more on labor markets to meet their economic needs. This is transforming the form of peasant production in such households and leading to dramatic changes in women's economic options.

The development of wage labor has led to a breakdown not only in reciprocal labor arrangements within the household, but also to an erosion of women's traditional labor networks between households. Formerly, village women's age grades (known as kafos) provided large labor groups for rice transplanting. The money collected was used for common purposes, such as financial assistance in time of need or for collective celebrations. At

other times the work group functioned as an auxiliary labor reserve for women who were sick, childbearing, or otherwise unable to go to the fields. Nowhere are the effects of the project's changing production relations more visible than in the transformation of the structure of women's kafos. For females dispossessed of rice land and currently working for hire in the rice fields, the kafos now function as work groups. They provide an organizational framework in which women pool their labor for hire in transplanting, weeding, or threshing. In contrast to the preproject period, the money collected is no longer retained for the group's mutual purposes but divided up among the individual women members. By forming work groups women are able to receive a better rural wage than as single workers. For example, for transplanting, a group of twenty women usually charge 80 dalasis per irrigated plot, and they are able to complete two plots in one day. Each woman then makes eight dalasis instead of five, the daily wage labor rate.

Another way in which these women are adapting to a semi-proletarianized status is to rent irrigated land in the small-scale perimeters that were developed before Jahaly Pacharr. While the areas had been steadily falling out of production since the 1970's, the development of the Jahaly Pacharr project accelerated the process. This was due to the fact that land ownership in both types of projects has been concentrated under control of the traditional elites, who lack adequate household labor to keep all the perimeters in production. Since failure to cultivate can cause loss of usufruct, land-rich households have given primary attention to the project's plots. Owners of the small-scale perimeters have therefore had to reduce their cultivation, which has made them increasingly available for rental. Rental of irrigated land in the schemes is dated to about eight years ago when rice-growing migrants began renting the plots during the dry season.(18) Since the development of the Jahaly Pacharr project and the availability of more irrigated land for rent, Mandinka women also have begun renting plots in the small-scale irrigation schemes.

While production on these perimeters has suffered due to chronic nation-wide shortages of diesel and spare parts for the pumps, if fertilizers are purchased and inputs are available on a timely basis, yields can rival those on the Jahaly Pacharr plots. The main factor keeping women from renting, however, is not plot availability but the cost. Depending on the plot's size, rental rates vary from 30 to 50 dalasis while another 50 dalasis is charged for the pump's diesel fees. Even if a woman is married to a man with irrigated land for rent, she usually pays the prevailing rental fees. These observations underscore two important facets of the local social structure of production: i) the separation within the household of economic activity among family members and ii) limitations on the ability of the benefits of economic development to trickle down to dependents. Projects

TABLE 5

Structure of Investment from Pump-Irrigated Perimeters: Wellingara*

<u>Category</u>	<u>Number of Households</u>	<u>Total</u>
1. Small consumer durables (bicycles, radios, cassette players)	4	12
2. Animals or agricultural implements	4	12
3. Wives	6	12
4. Petty trade	3	12
5. Mecca	2	12
6. Home improvements	3	12

*Sample: 12 out of 40 households

Source: Fieldwork data 1986

TABLE 6

Percentage of Households Using Hired
Labor on Pump-Irrigated Plots

1984 and 1986: Wellingara

<u>Year</u>	<u>Percentage</u>
1984	70
1986	71

Source: Fieldwork data

TABLE 7

Percentage of Hired Labor per Activity
Pump-Irrigated Plots, 1984-1986

<u>Activity</u>	Year	
	<u>1984^a</u>	<u>1986^b</u>
Transplanting	67%	66%
Weeding	29%	29%
Harvesting	42%	61%
Threshing	21%	63%

^a Sample: 63% households in Wellingara

^b Sample: 93% households in Wellingara

Source: Fieldwork data

TABLE 8

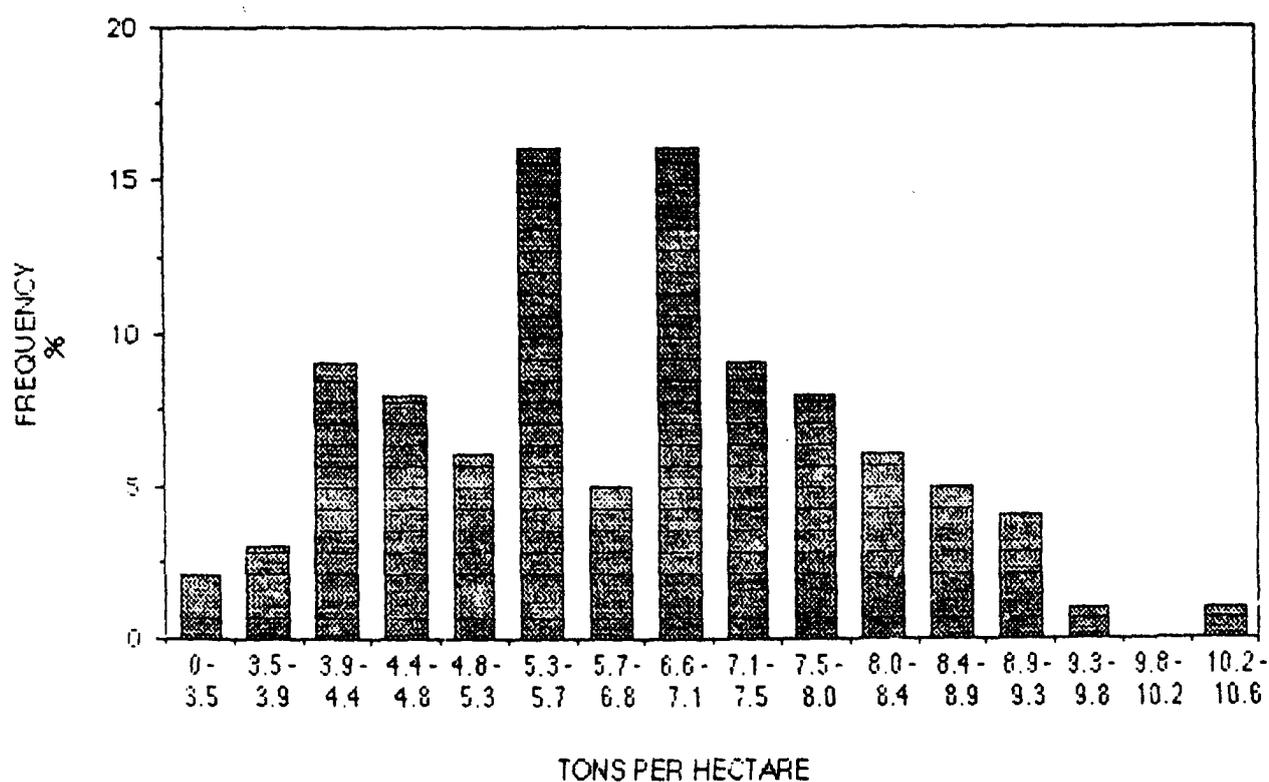
Cost of Hired Labor Per Pump-Irrigated Plot,
Wet Season 1986 (Wellingara)

<u>Dalasis</u>	<u>US Dollar Equivalent</u>	<u>Number of Households</u>
50- 99	7-14	3
100-199	14-28	10
200-299	28-42	11
300-399	43-57	2
400-490	50-70	<u>2</u>
		28

Source: Fieldwork data, 1987

Figure 4

**DISTRIBUTION OF RICE YIELDS PER HECTARE
WET SEASON 1984
PUMP-IRRIGATED PLOTS, JAHALY-PACHARR**



Source : Based on preliminary findings from IFPRI-PPMU Survey on Agriculture, Consumption and Nutrition from 10 sample villages of Jahaly-Pacharr project area (1984-1985). Sample involved 174 households, 2,809 individuals.

designed on the basis of family labor and a perceived mutuality of interests may thus not only fail to command the anticipated family labor but may also seriously undermine the economic independence of dependent household members, even if they contribute to overall food security.

A final way women are adapting to the changes brought forth by development of the Jahaly Pacharr project is to assert their claim to rice land outside the project area. This is particularly evident in the low-lying areas coterminous to Pacharr swamp. In many of the unclaimed or unutilized portions, there has been a land scramble by women to mark and define production areas. For many, this is the only land they have for rice cultivation. These fields abut the project's irrigation canals and sometimes benefit from spillover. Whether or not the crops succeed, women plant as a means to secure their individual rights to the land. Should the area become absorbed into the project, women will not easily relinquish their control, which they consider their individually-owned land. These plots are known as tesito fields, the name deriving from the government ruling party's political slogan, "pull in one's belt," to achieve mutual objectives. Here, the term has been interpreted to mean "self-help" areas--places where women take it upon themselves to ensure better conditions by using their labor and effort to defend their claims to local resources.

SUMMARY OF CONTRACT FARMING ON HOUSEHOLD PRODUCTION DYNAMICS

The main impact of contract farming on production dynamics within project households has been on the social organization of family labor. A variety of arrangements have developed, but the most significant changes are evident among the Mandinka, who had a particularly marked gender basis to crop cultivation. In some villages the commoditization of the food crop, rice, has led to the emergence of labor markets, primarily comprised of semi-proletarianized female workers. While the loss of access to land has politicized women and caused them to take efforts to secure what they still control, there has been a breakdown in women's ability to use nonmonetary ties in the social structure to mediate their access to the means of production. The barter or sale of their labor power is becoming an integral component of women's ability to meet their economic needs. A consequence of these changes in female labor availability and use is the evolution of new forms of peasant production in the project area.

The development of new production relationships in Jahaly Pacharr derives from the manner in which contract farming affected the social structure of production. This is definitely linked to ethnic differences as well as to the resource strategies of different groups. Those ethnic groups that had the

most diverse economic base and a less structured gender basis to crop production and ecosystem access have better adjusted to contract farming. They have been able to effect an intensification of family labor with fewer structural conflicts. When this has not been the case--most notably among the Mandinka--the main impact of contract farming has been to restrict the access to rice land of certain household members (notably females) in order to gain control over their labor. For resource-rich households and/or those who have settled internal conflicts over women's labor and resource needs, incipient sharecropping production relations have emerged. But, for those households that are resource-poor or were unable to resolve the internal conflicts that were unleashed with project development, females have lost access to rice land altogether. Currently their economic needs are being met through a diverse portfolio of activities--wage labor, vegetable marketing, irrigated land rental, and recently, the production for sale of sesame seed.

Finally, three issues are of long-term theoretical and policy interest: first, whether the sharecropping and wage labor developments in Jahaly Pacharr are unique to the Jahaly Pacharr case or can be found generally in other contract farming schemes; second, the ability of such arrangements to fulfill the project's productivity goals and loan repayment guidelines; third, whether or not changes in the social structure of production will promote productive investment and real growth in the nation's agricultural sector.

PART III.

IMPACT OF THE JAHALY PACHARR PROJECT ON ECONOMIC DEVELOPMENT

CONTRACT FARMING AND ECONOMIC GROWTH

This concluding section of the study is concerned with two issues. The first is the local, regional, and national impacts of contract farming on agricultural production. The second is an assessment of the risks, growth, and equity consequences of contract farming in the project.

The Jahaly Pacharr project has had far-reaching impacts on Gambian agricultural production. It has changed the social organization of smallholder production, influenced regional farming practices, and been instrumental in guiding national agrarian policies. The main dimensions of the impacts are reviewed below.

IMPACT OF CONTRACT FARMING: National

A most significant question regarding Jahaly Pacharr is whether or not the government of The Gambia has the resources to manage the project once donor funding and technical assistance expires. The project management unit currently receives a fuel subsidy from donors, while spare parts and machine repairs are managed by the Dutch. The Gambia, meanwhile, continues to experience chronic nation-wide fuel shortages, which contributed to the failure of the small-scale irrigation schemes. Moreover, although funds were allocated to train Gambian counterparts to the European staff, their selection reflected political and nepotistic considerations more than skill levels. As a result, the project does not have a complete Gambian staff that can manage the financial and agronomic operations when the Dutch leave. Given the negative historical experience with pump-irrigation in The Gambia and elsewhere in Africa, and the country's strained financial resources, it is not clear that it can afford to operate a project like Jahaly Pacharr without continued donor support in fuel subsidies, spare parts, and technical expertise. The consequences of any failure, however, will be borne most heavily by the local farmers. Unlike the earlier schemes, the Jahaly Pacharr project is a massive engineering structure that has radically transformed the landscape. This prevents the plots reverting to wet season, tidal-irrigated use as swamp rice fields.

In 1985/1986 the Jahaly Pacharr project supplied about 4,000 of the 23,000 tons of paddy domestically produced in The Gambia

(Table 9). Although the project is not yet completed (scheduled for mid-1987), it has fallen quite short of generating the 7,000 tons originally projected, which limits its foreign exchange savings capacity. Even more significant for the project's import-substitution objectives is the amount officially marketed to the cooperatives. Table 10 presents sales of paddy to the project's cooperatives for the last three years. These figures indicate that less than half the estimated project production is being sold, suggesting that producers are selling little more than that needed to cover their loans. The rise in sales in 1986 is related to two factors: 1) the ending of the government's cheap food policy that depressed the consumer price below that of neighboring countries and 2) the stabilization of the dalasi, which had been floating in 1985. During that year, it was estimated that fifty percent of the project's paddy production went to Senegal where rice prices were higher and farmers received hard currency for their sales. Higher paddy sales in 1986 reflected a stabilization of the nation's macro-economic situation, but the amount marketed does little to address domestic rice needs.

While the project has not greatly improved rice-import substitution in The Gambia, it has proved to be popular politically.(19) For the three-quarters of the farmers who produce over five tons per hectare (Figure 5), incomes have doubled or tripled since participation in the project. An even greater percentage of farm families have been able to achieve rice self-reliance. In spite of the uneven rewards from rice cultivation among rural households and between family members, the project enjoys the support of most farmers because it has improved household subsistence security.

Contract farming has demonstrated its effectiveness in enabling the state to achieve two long-sought objectives: 1) the implementation of double-cropping in the regional farming system and 2) good loan repayment rates in the irrigation sector. Jahaly Pacharr's pump-irrigated plots have experienced nearly a 100 percent seasonal cropping rate--a major improvement over the small-scale irrigation perimeters, where on the average only 33 percent are planted in the dry season and 10 percent during the rains. Moreover, contract farming has vastly improved the loan recovery rates in irrigated rice. On Jahaly Pacharr's pumped plots, loan repayment is nearly 100 percent (Table 11). On the small-scale perimeters the figure averages about 30 percent (Demba, personal communication).

On contract farming's role in the government's overall objective to restructure peasant agriculture to simple commodity production, a few preliminary observations can be made. Rice has certainly emerged as the second cash crop of The Gambia. When the government follows cheap food policies, rice even becomes a valued export crop to project farmers. Contract farming has thus

TABLE 9

Crop Production Pattern for the Period 1974/75-1985/86 and Arable Land

CROPS		74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86
Upland Paddy	C	-	-	-	21.40	22.10	9.20	2.00	4.60	4.80	4.50	2.00	3.50
	H	-	-	-	-	-	4.90	1.50	4.20	4.30	3.30	1.50	3.10
	Y	-	-	-	661	1097	537	1200	1129	969	792	1447	1160
	P	-	-	-	14.10	24.20	2.60	1.80	4.70	4.10	2.60	2.20	3.60
Swamp Paddy	C	23.20	25.40	21.70	-	-	14.50	22.50	24.00	24.70	14.80	6.90	8.50
	H	-	-	-	-	-	10.30	17.30	22.30	22.90	10.20	6.20	-
	Y	1125	1067	613	-	-	1699	1462	1251	1296	1774	1450	1599
	P	26.10	27.20	13.30	-	-	17.50	25.30	27.90	29.60	18.10	8.90	11.70
IRRIGATED A. Small Schemes	C	-	-	1.10	0.80	0.80	1.90	-	-	-	1.30	2.90	0.80
	H	-	-	-	-	-	1.90	2.90	1.30	-	1.30	2.90	0.80
	Y	-	-	4349	4064	5131	4869	5390	5059	-	4207	5590	4780
	P	-	-	4.70	3.10	4.10	9.30	15.60	6.90	-	5.40	16.10	3.90
IRRIGATED B. Jahally/ Pacharr	C	-	-	-	-	-	-	-	-	-	-	-	0.90
	H	-	-	-	-	-	-	-	-	-	-	-	0.90
	Y	-	-	-	-	-	-	-	-	-	-	-	4135
	P	-	-	-	-	-	-	-	-	-	-	-	3.90
TOTAL PADDY	C	23.20	25.40	22.80	22.20	22.90	25.60	24.50	28.60	29.50	20.60	11.80	13.70
	H	-	-	-	-	-	17.10	21.70	27.80	27.20	14.80	10.60	12.10
	Y	-	-	-	-	-	-	-	-	-	-	-	-
	P	26.10	27.20	18.00	17.20	28.30	29.40	42.70	39.50	33.70	26.10	27.20	23.00
GROUNDNUT	C	104.8	98.80	107.6	105.4	106.2	96.90	82.50	92.50	98.50	110.0	98.50	65.90
	H	-	-	-	-	-	67.80	68.90	80.70	95.00	97.20	91.40	58.50
	Y	1385	1429	1329	949	1256	986	874	1349	1593	1172	1150	1295
	P	145.2	141.1	143.0	100.0	133.4	66.90	60.20	108.9	151.4	113.8	105.1	75.80
COTTON	C	-	-	-	-	1.7	1.0	-	-	-	2.0	3.20	4.60
	H	-	-	-	-	-	1.0	2.30	2.60	2.80	1.4	-	-
	Y	-	-	-	-	506	904	608	1034	873	820	3253	3186
	P	-	-	-	-	0.90	0.90	1.40	2.70	2.40	1.20	1.00	0.70

C = Cultivated area in '000 ha

H = Harvested area in '000 ha

Y = Yield in kg/ha

P = Production in '000 tonnes (production of cereals in grain form; groundnut is in undecorticated form).

Swamp and Upland Rice

Source: PPMU (Ministry of Agriculture), 1986.

TABLE 10

Paddy Sales to Co-operatives, Jahaly Pacharr

<u>Season</u>	<u>Year</u>	<u>Tons paddy (metric)</u>
Dry	1984	699*
Dry	1985	1177
Wet	1985	1200
Dry	1986	1786
Wet	1986	2000 (estimated)

* This figure reflects the reduced acreage planted in the 1984 dry season: only half Jahaly swamp or about 220 hectares.

Source: Jahaly Pacharr Cooperatives

TABLE 11

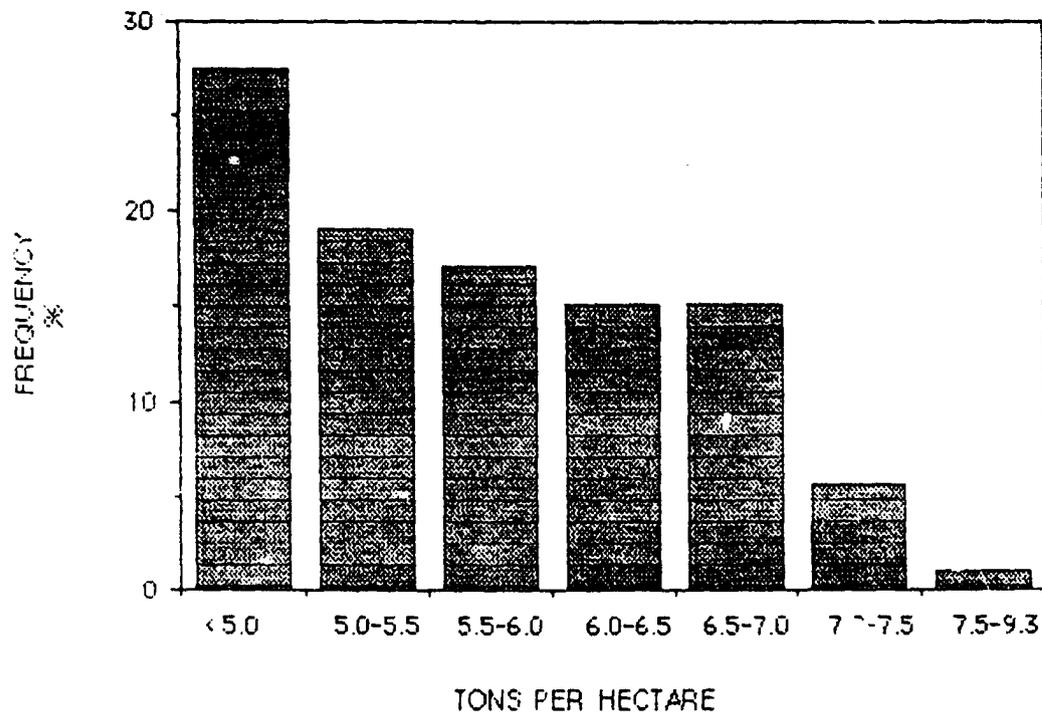
Credit Issues and Loan Repayment, Jahaly Pacharr
Irrigated Plots, Wet Season, 1985

<u>Swamp</u>	<u>Due (daiasis)</u>	<u>Recovered</u>	<u>Percentage Received</u>
Jahaly pump	491,146.84	471,612.74	96.16
Pacharr pump	137,160.95	137,160.96	100.00
Pacharr rainfed	240,711.06	193,949.05	80.38

Source: Project data.

Figure 5

**DISTRIBUTION OF
RICE YIELDS PER HECTARE
WET SEASON 1986
PUMP-IRRIGATED PLOTS**



Source: Project Management Unit Data

far succeeded in intensifying commodity production by extending farmers' agricultural calendar, but the change in agricultural strategies must be understood in the context that the crop produced is also the dietary staple.

Besides intensifying farmers' labor in cash-crop cultivation through an extension of the agricultural calendar, the second component of the government's goal to transform smallholder agriculture is to diversify commodity production. The Jahaly Pacharr project was designed to get farmers to grow a second cash crop, not one that will replace groundnut production. From the early stages of project design, irrigated rice farming was envisaged as complementary to upland groundnut production, and the fundamental plot size was calculated on the labor units needed to perform both activities (EUROCONSULT 1980). Official concern continues over the project's consequences for groundnut production. One recent survey indicates that villages with high per capita irrigated rice production have low per capita groundnut production (Table 12). The project management has consequently implemented two mitigative actions. The agronomy unit now adjusts the irrigated cropping schedule to minimize labor bottlenecks with groundnut cultivation. Additionally, a farming systems expert has been appointed to examine social constraints to specialized commodity production and to make proposals for harmonizing groundnuts with irrigated rice cropping.

A recent project document clearly develops the role envisaged for the Jahaly Pacharr project in the transformation of local smallholder production [EUROCONSULT 1986]. The report, concerned about the narrowed production focus of the project management, calls for a greater sensitivity to the social dynamics of the farming system--particularly the impact of irrigated rice on upland cropping. Yet the term "upland cropping" is restricted to mean groundnut cultivation. The report's conclusions in favor of specialized commodity production by project farmers is based on the rather shaky assertion that the traditional upland cereals are erosion-causing while monocropping groundnuts promotes soil-conserving practices (Report #6, 1986).(20) Behind the document's recommendations is a strong commitment to orienting smallholder agricultural strategies to specialized commodity production on both the uplands and lowlands.

The ability of contract farming to achieve double cropping and loan repayment has had one final impact in the arena of national agrarian policies. It has caused the government to forge ahead with plans to rehabilitate the 2400 hectares developed in small-scale perimeters. Since only about a third of them are now in operation and experience poor loan recovery rates, the government has devised a rehabilitation plan to standardize plot size in 0.5 hectare units so that they function

TABLE 12

Production of Crops Per Adult Equivalent Person by Village
(in kilograms)

Village	(kilograms per adult equivalent)					
	Jahaly Pacharr rice Wet and Dry Seasons	Chinese Rice	Traditional Rice	Upland Cereals	Total Cereals	Ground- Nuts
Njoben	176	4	2	235	417	461
Pacharr	589	20	31	42	683	122
Darsilameh	799	6	19	13	838	52
Sinchou Abdou	244	43	15	120	422	259
Sare Samba	138	-	132	177	447	240
Sare Bala	196	9	35	147	387	333
Sukurr	572	-	-	13	585	112
Tubanding	<u>32</u>	<u>131</u>	<u>5</u>	<u>27</u>	<u>196</u>	<u>50</u>
TOTAL	394	22	118	106	550	233

Source: IFPRI 1986

and operate like Jahaly Pacharr. The schemes will also be organized under centralized pumping units and likewise be provided a diesel fuel and pesticide subsidy during the first five years. Currently the plots are owner-operated. While there are no plans to attempt a negotiated lease, the government hopes to effect control over producers by tying them to production loans negotiated through the cooperatives, which have the legal right to evict farmers for defaulted loans. The key to the government's goal is to establish the principle under the prevailing customary land tenure system that "developed" land belongs to the people of The Gambia and farmers will no longer have the right to use it unproductively. The most important implication of the proposed strategy is that it will extend the production package implemented in Jahaly Pacharr to another 17 percent of the rural population (FAO/ADB 1986).

Regional

The Jahaly Pacharr project has had several economic consequences for regional development. First, it has led to a high rate of in-migration, mostly rural to rural, from within The Gambia, neighboring francophone countries and Guinea Bissau. Population growth rates, which exceed the national rate of annual increase (3.5 percent), are calculated for the region in Table 13. Many of the migrants are small-scale traders and businessmen, who offer goods and services that were not available before the project's inception while others are involved in private marketing and transport of producer paddy.

A second important impact of Jahaly Pacharr is the interest it has generated regionally in irrigated rice cultivation. Many migrants from rice-growing areas of western Gambia, Casamance, Senegal, and Guinea Bissau have come to the project area to rent the small-scale perimeters that have become available since project development. In one village, Kerewan Samba Sira, there are several small-scale schemes that are operating primarily because of the influx of migrants who rent rice plots in the dry season. This rice is usually not sold but used for subsistence needs. Their income from groundnut cultivation, palm wine tapping, or trade is used to subsidize the rental of irrigation perimeters. The Jahaly Pacharr project thus has had a positive impact on increasing regional interest in i) double-cropping and ii) irrigated rice cultivation.

A final important impact of Jahaly Pacharr has been on the development of backward and forward linkages to the project. The Jahaly Pacharr project grows, markets, and stores paddy, but it does not mill it. Instead, the cooperatives transport the paddy across the river to the government mill for processing. Much of the paddy sold locally, however, is processed by small, motor-

Table 13 Jahaly Pacharr Project Population Estimates 1973-1983		
Villages: Jahaly Swamp*	1973	1983
1. Jahaly	628	922
2. Jahaly Madina, Madina Unfally	1,186	1,539
3. Saruja	891	1,522
4. Brikama Ba ¹	702	1,988
5. Sukurr	240	229
6. Walikunda	109	41
7. Boiram	661	993
8. Brikama N'Ding	375	531
9. Darsilami	231	618
10. Njoben	581	861
11. Sinchu Magai	165	157
12. Sinchu Madado	238	341
13. Wellingara Kejaw	231	263
14. Sinchu Bamba	134	156
Total	6,372	10,161
Annual Rate of Growth = 6.0%		
Villages: Pacharr Swamp*	1973	1983
1. Pacharr	626	813
2. Faraba	318	449
3. Madina Sisay Kunda	135	108
4. Sinchu Dembel	160	177
5. Taifa Amadu	261	281
6. Fula Bantang	240	371
7. Sare Yoro Tacko	174	273
8. Taifa Saikou	459	477
9. Tabanding	121	213
10. Kerewan Samba Sira (Fula and Mandinka)	631	1328
11. Sare Futa	167	282
12. Madina Sinchu Yoro	167	282
13. Sinchu Bora	126	130
14. Fass Abdou	300	362
15. Boweh Fula	136	65
16. Alluldi	217	633
17. Gidda	186	243
18. Wellingara Adam	108	123
19. Kur Kur Yoro Mballow	211	224
20. Kusalang	159	171
21. Jamagen	183	280
22. Kahow	200	320
23. Sare Ngai	406	487
24. Batang Nyema	151	215
Total	6,157	8,295
Annual Rate of Growth = 3%		
Both Swamps Total	12,529	18,456
Annual Rate of Growth = 5%		
¹ Brikama Ba is located on the main trans-Gambian road and is the major commercial center for the Jahaly Pacharr project. Growth reflects the importance of the project on the region. *Data not available for a few project villages, with population < 99. Sources: 1973 Census and 1983 Census, preliminary data.		

driven mills, which are now found in the large trading villages. Owned by local businessmen, the mills are also widely used by farm families, who pay one unit of paddy (cups, sacks, bags) for each nine received. Besides rice mills, at this stage few other economic linkages exist since the project is still being managed with Dutch technical assistance, who handle all machine repairs and other infrastructural needs.

Local

Development of the Jahaly Pacharr project has had a number of consequences for local producers. While it has exacerbated gender and generational differences in access to resources among family members, it has also contributed to household food security. In this section the project's impact on rural development will be examined with a particular focus on differences in economic growth that have emerged between participating households.

The project management has calculated that a farm unit must produce at least four to five tons of paddy per hectare in order to repay the seasonal loans, fulfill subsistence needs, and generate marketable surpluses. But as Table 14 demonstrates, overall yield declines, since the project's first year, have narrowed average production to the margins of this range. Figure 5, which presents the distribution range for the 1986 wet season harvest, illustrates two points: 1) very high yields are technically possible in the project, with some pumped plots reaching over nine tons per hectare; and 2) about one-fourth of the farmers cultivating the pump-irrigated plots are on the margin of, or fall below, the minimum range for project goals. Within this group, about ten percent of the households are experiencing serious difficulty in loan repayment, while an additional five percent are unable to fulfill subsistence needs.

The project's extension services are not a cause of lowered yields for participating households. The ratio of farmers to agricultural assistants, 290:1, appears adequate for information diffusion. The network of agronomic assistance has also been improved by the appointment of contact farmers for each ten-hectare block. It is their responsibility to inform co-villagers of the dates for demonstration techniques and key irrigation operations. The variation in yields in Jahaly Pacharr plots is due to a range of factors, some technical, but mostly social and economic.

Real economic growth in Jahaly Pacharr depends on the overall impact of contract farming, specifically its effect on households of all socio-economic groups. On the majority of

TABLE 14

Average Yields Pump-Irrigated Plots, Jahaly Pacharr

<u>Season</u>	<u>Year</u>	<u>Yield/hectare</u>
Dry	1984	7.5 tons
Wet	1984	6.5 tons
Dry	1985	5.7 tons
Wet	1985	4.0 tons
Dry	1986	5.7 tons
Wet	1986	est. 4.8 tons

Source: Project Management Unit, Jahaly Pacharr Project

plots with good yields, subsistence requirements and marketable surpluses are possible with contract farming. Table 15 presents the breakdown in use of the disposable surplus for those farm units with average production rates. Farmers claim that one-third of the harvest goes for loan repayment and about 50 percent for consumption, while the remaining 15-20 percent is surplus. Moreover, the International Food Policy Research Institute's (IFPRI) 1985 survey of 10 sample villages (174 households, 2,809 individuals) demonstrates that these patterns are rather consistent between villages with few significant ethnic differences (Table 16). But for the ten to fifteen percent of households falling below production goals, often there is not enough rice after loan repayment to cover subsistence needs. These "problem" project households fall into three general categories: i) a minority whose plots experience technical problems; ii) those with too much project land in relation to available labor; and iii) households that have too little land to meet their subsistence and economic needs. Contract farming has had different repercussions for each of these groups.

There are a few pump-irrigated plots in the project where yields fail or are diminished due to poor drainage or uneven land levelling. For a variety of reasons the project management has not managed to correct the problems in such plots. But the farmer is nonetheless expected to cultivate each season and repay the production loan. If not, eviction is threatened. This is quite a different approach than that established on previous irrigation projects. For example, in the small-scale perimeters if a farmer can prove that crop failure is due to reasons outside his control (including the government's failure to deliver inputs on time), the production loan may be cancelled. This is not done in Jahaly Pacharr. Loans must be repaid in full, irrespective of cause. In these cases, the ability to remain in the project will depend on whether the farm unit can command the necessary funds to cover the seasonal loan when there is crop failure.

In general, the cropping problems in the remaining Jahaly Pacharr households are linked to the original inequitable land distribution, not only to differences in plot awards between farm units, but also to household adjustments to women's loss of control over rice plots. As we have seen, household adaptation to women's demands for labor compensation was related to three key factors.

1. The ethnic group involved, specifically inter-ethnic differences conditioning women's access to upland farms.
2. The degree of resource control achieved by the farm unit in the original land distribution. Those households with one or more pumped plots and tidal irrigated land had a great deal more flexibility in compensating women for their labor than those with limited access to plots.

TABLE 15

Use of Harvest by Crop (1984/85)

<u>Purpose</u>	<u>Irrigated rice wet season</u>	<u>Rainfed/tidal rice</u>	<u>Chinese rice</u>	<u>Traditional rice</u>	<u>Early millet</u>	<u>Sorghum</u>	<u>Maize</u>	<u>Groundnuts</u>
			(in percentages)					
Rent	0.00	0.00	0.00	1.40	0.00	0.00	0.00	0.30
Loan repayment	30.10	34.20	5.70	0.40	0.00	0.60	0.40	2.50
Hired labor	1.40	1.60	3.10	1.20	0.40	0.00	0.10	0.10
Gift	6.50	5.80	9.30	10.70	10.40	8.30	13.10	3.50
Sold	6.70	15.40	7.80	18.60	2.80	0.00	3.60	70.70
Consumed	53.10	39.10	69.50	62.80	84.50	88.50	82.90	12.20

Source: IFPRI 1986

TABLE 16

Use of Harvest for Consumption and for Sale by Villages
Jahaly Pacharr

<u>Village</u>	<u>Irrigated Rice</u>		<u>Groundnuts</u>		<u>Ethnic Group</u>
	<u>Consumed</u>	<u>Sold</u>	<u>Consumed</u>	<u>Sold</u>	
Njoben	56.7	27.1	9.3	75.9	Mandinka
Pacharr	53.1	35.8	16.8	63.00	Wolof
Darsilameh	49.1	43.1	22.9	69.0	Wolof
Sinchou Abdou	65.3	29.2	14.2	78.3	Mandinka
Sare Samba	62.6	31.4	11.2	75.2	Fula
Sare Bala	60.8	35.1	12.1	76.4	Fula
Sukurr	58.2	34.3	31.3	61.9	Serrahuli

(in percentage of total production)

Source: IFPRI, p. 14, 1986

2. The internal dynamics between family members within a farm unit. When the conflicts could not be resolved between men and women, females withdrew their labor, which contributed to lower yields. Contract farming has begun to affect each group in quite different ways.

Most of the households with multiple project plots that experience yield problems are usually not in trouble with loan repayment. In fact, there are few land-surplus households that do not pay their loans. The poor yields are primarily due to labor recruitment. For this group depressed yields result from two primary causes: i) either too much land was received relative to available family labor; or ii) the plot award was fair but a labor shortage has developed from the inability of the household to resolve internal conflicts over women's demands for labor remuneration. As we have seen, this second factor operates primarily in Mandinka villages. Among the land-surplus households, there are some that barely cultivate their plots. Project officials are well aware of who these farm units are, but despite pressure from the Dutch technical team to bring action against them, the management has been reluctant to do so. This is due to two principal reasons. First, generally the resource-rich farm units are the local elites and dominant political figures in village and regional power; and second, they do pay their loans. Plots with poor yields that fall within this category are not only an unproductive use of project land (and for that reason reminiscent of the problems that developed with the small-scale perimeters), but their low yields depress the technological potential of the project. Since such farm units are able to repay their loans, it is unclear how much muscle politically the project management will exert to reallocate these plots to poorer farm units.

The bulk of the households facing economic difficulties in the project, however, are those that are unable to achieve good yields because they are sharing a plot with other families. Generally, the labor on shared plots is not pooled, and each household's cultivation area delimited by bounds. Differences in the timing of activities and cropping patterns between subunits sharing a plot contribute to depressed yields. This is the agricultural group most at risk in the Jahaly Pacharr project. Many of them derive from the poorest socioeconomic stratum of participating villages. Project officials estimate that 15 percent of all the plots in trouble for loan repayment are sharing land. This group is the least likely to command reserve funds that can be mobilized for loan repayment when harvests are inadequate.

It is too early in project development to assess whether the project management will take action against the two types of problem households--those that fail to repay loans, and those that fail to cultivate or make little effort to do so. This

should become clearer in the months to come because the management has decided to begin disciplinary action first against the project's eighteen loan-defaulting households. Decisions on which cultivators will be evicted from the project, however, will remain primarily in the hands of the land allocation (land disciplinary) committees as well as elders from the concerned villages, therefore placing the outcome under the control of local elites. Potential plot loss, however, threatens more serious subsistence insecurity for the resource-poor households than for those able to repay their loans, because the project has absorbed most of the area's alternative rice-growing swamps. Their ability to find other food cropping sites in the region has now become quite limited.

The government's position on problem cultivators has been clearly formulated by the project manager:

The only reason why government must maintain lease over the land is if legally after all those investments one or two farmers have been found wanting then government must have the legal backing to tell them good-bye . . . just ask other farmers to come in. . . . We are busy setting up these disciplinary committees. Because of the level of investment in the project we are not going to gamble with farmers who do not want to exert enough elbow grease to produce good yields. For those farmers we . . . will ask the disciplinary committees to deal with them and one of the ways is to eject them out of the project and invite better farmers to come in" (in BBC's Global Harvest, 1986).

The ability of many project households to meet production goals, however, does not depend solely on exerting elbow grease, or intensifying labor. It also depends on prevailing patterns of resource control. This includes the ability of the more vulnerable households to liquidate loans as well as inter- and intra-household patterns of labor control and land access. Finally, economic growth in the project will be determined by the way in which each socioeconomic group adjusts to contract farming production strictures.

RISK ASSESSMENT OF THE JAHALY PACHARR PROJECT

1) The centralized management of the Jahaly Pacharr project has made farmers dependent on staff directives and guidance. Since there is no truly representative farmers' organization, project participants do not have any independent organizational structures to represent their needs when donor funding ceases.

2) Project farmers appear to be reducing upland food crop cultivation in favor of groundnuts. This limits the variety of food crops in the diet, increases agricultural risks, and makes farm units more dependent on commodity production for household reproduction.

3) Security of tenure. Even though the land originally belonged to local cultivators, the lease enables the Jahaly Pacharr management to evict farmers who do not meet loan repayment guidelines. Since the land is primarily a food-growing area for local farmers, its loss can bring serious nutritional repercussions to a household. The unavailability of alternate lowland rice areas limits the farm unit's ability to find alternative food-cropping sites.

SUMMARY REMARKS ON CONTRACT FARMING AND ECONOMIC GROWTH

To summarize, in the Gambia, contract farming has proven an effective mechanism for intensifying farmers' agricultural labor. This has been achieved in two principal ways: i) through an extension of the agricultural calendar to produce two crops per year; and ii) by increasing the farm unit's labor in production. But the intensification of the work regime has not always occurred as originally envisaged by project officials--through the over-exploitation of family labor. In many cases the household head has not been able to capture the labor of family members for crop production. In such instances, labor intensification has been achieved through the hire of wage workers. The problems that have developed in Jahaly Pacharr households over the availability and use of family labor to meet contract farming production demands have several implications for economic growth in the project.

First, they indicate that contract farming requires major adjustments in the social organization of the farm unit's crop production. The manner in which households respond to externally-induced pressures on the production unit may directly affect productivity. Labor has always been the most important production constraint in The Gambia, yet contract farming and the technological package introduced in Jahaly Pacharr demand an even greater work input from smallholders. This has necessitated major changes in the social organization of production in project households, which in turn has brought about some undesirable social and economic consequences. For instance, among the Mandinka, household heads sought to gain control over skilled female labor in rice production by restricting women's access to farm land. In some households this has induced internal changes in the domestic unit which have increased gender inequality in resource allocation and control between family members. Although such changes do not characterize the majority of project households, this study argues that they could have been more

prevalent if the crop produced were not the dietary staple. As we have seen, contract farming a food crop enabled most households to draw upon family labor from a tradition that operated within the Gambian farming system. It was primarily in these households that broke with this tradition, by no longer linking individual crop rights to the provision of labor, where the labor system on household fields collapsed. While this may appear to be a victory for those women who have withdrawn their labor from cultivation, they still provide most of the labor in rice production; only now they do not have their own land but instead form part of a work group, receiving a wage for their work. The ability of future contract farming schemes to effect an intensification of family labor will depend on whether the crop produced is consumed and also on the adjustments made within the household to the new labor demands.

Second, as a preliminary review of the Jahaly Pacharr project demonstrates, the ability of households to achieve desired productivity goals is strongly linked to the resolution of conflicts over labor. If the form of adaptation to contract farming leads to restricted resource access by family members and consequent labor withdrawal, crop yields and productivity may diminish. Moreover, if plot allocation in contract farming schemes awards some households too much land in relation to available labor, unproductive accumulation may contribute to lower yields. Thus, inter- and intra-household equity issues remain important in achieving productivity goals in smallholder schemes.

From the cultivators' point of view, the Jahaly Pacharr project is generally considered a success. It has greatly contributed to household subsistence security. From the state's perspective the project receives a more mixed review. It has accomplished some key objectives long seen as critical to the transformation of peasant production, such as double cropping and loan repayment, but the project has not contributed significantly to rice import-substitution needs. Producers sell to the cooperative little more than that required to repay loans. Most of their surplus sales continue to be transacted with local traders, and much of the rice sold is transferred across the border to Senegal. The ability of contract farming in Jahaly Pacharr to generate rice surpluses for the domestic market is tied to the evolution of three key factors, which are listed below:

- 1) the percentage of the average yield the government calculates for the seasonal loan;
- 2) the use of the investible surplus by project farmers, specifically whether or not it is reinvested in agriculture, which will be key to sustaining high yields;

3) the political ability of the state to enforce loan repayment and production guidelines. A push by the state to evict farmers, especially those who are politically elite may jeopardize the basis needed to mobilize and legitimize popular support for future projects. If the project's plots are not used productively, the ability of Jahaly Pacharr to deliver its technological promise will be seriously constrained.

The manner in which these relationships evolve is critical to the ability of The Gambia to solve its agrarian crisis. It is also key to the type of transformation that will occur in peasant agricultural production.

CONCLUSION

This review of irrigated rice production in the Jahaly Pacharr project has raised a number of research questions of relevance to studies on contract farming. The main theoretical and policy implications of the Gambian case study are summarized in this section.

Most studies of contract farming in Africa have focused on projects that are based on traditional tropical cash crops like palm oil, sugar, tea, and coffee. There is good reason for this. Few contract farming schemes have involved food-crop production, which has been attributed to the fact that subsistence crops are often price controlled due to the cheap food policies of many African governments (Glover 1983). Contract farming in food staple production in The Gambia suggests, however, that this thesis needs to be reevaluated.

An IMF-induced economic recovery program has brought an end to cheap food policies in The Gambia, (21) but it is important to note that contract farming was planned and initiated years before the policy change. Moreover, as the historical review of contract farming demonstrates, its implementation in Jahaly Pacharr has its origins in the CDC's Gambia Rice Farm in the 1950's. Thus, contract farming in food-crop production is not new to The Gambia. What is new is its successful implementation.

A major contention of this study is that contract farming in The Gambia has to be understood in the matrix of the nation's agrarian dilemma--specifically, the country's dependence on one export crop to finance milled rice imports. The key objective long characterizing the colonial and post-independence government's agricultural policies has been to transform the smallholder sector to provide both export and food-crop surpluses (Carney 1986). While export production has stagnated in the last decade (Table 9), dependence on food imports has climbed so that half the country's annual needs are now supplied externally. The

implementation of contract farming projects based on the dietary staple, rice, must be understood in this context.

Another advantage to the contract farming of rice is that the promise of subsistence security has minimized producer resistance to the new production relations. The promise of food security has been important in fostering the state's overall objective to implement double cropping in the farming system and to expand commodity production to lowland ecological zones. In this context, then, the main issue in Jahaly Pacharr is not i) whether the project is significantly reducing import-substitution, or ii) its development costs per hectare compared to alternative schemes, (22) but its ability to transform the labor process of smallholders.

In addition to the role of contract farming in transforming smallholder agricultural production, this research also raises some issues of theoretical interest to household and gender studies. The Jahaly Pacharr project was specifically designed around the availability of family labor. As we have seen, the Green Revolution technological package and the new production relations introduced in Jahaly Pacharr have demanded an intensification of this labor. The external pressure placed on the production unit in the farming system has initiated major changes in household production dynamics. Of theoretical value is the manner in which the need to mobilize labor for the new production package has led to internal changes in the farming system and in resource rights at the level of the household.

Research attention has already been directed to the differential benefits that may accrue to certain household members through a restriction of other members' access to productive resources (Folbre 1986). While this development is sometimes cast in the context of economic or political struggles (see Folbre 1986; Richards 1986), the study argues that it may be one of the few options available to farm units that must intensify their work regime but operate with limited financial resources in labor-short agricultural contexts. Thus, the need to mobilize labor for introduced technological processes may lead to a limitation of resource rights within the farm unit.

A second and related concern is the manner in which such internal adjustments in the household may adversely affect the land and/or crop rights of dependent family members. This is most clearly illustrated with the Mandinka, who responded to an earlier phase of commercial agriculture by restricting female access to upland groundnut farms. Since the 1950's, conflicts over Mandinka women's rights to individual rice farms have been reported in many Gambian rice projects, even though historical evidence from the early eighteenth century suggests that women have long enjoyed rights to individual fields in exchange for labor on household food farms (Carney 1986'. The attempts by

male household heads to claim female labor for two cropping seasons and the failure among many Mandinka households to honor women's crop rights are not only a major structural break in some of the farming system's fundamental principles, but also demonstrate the dynamic processes conditioning resource use. Moreover, the claim in the Jahaly Pacharr project area that irrigated rice land belongs to elder males (through the designation of household land), illustrates the manner in which the outcome of resource struggles can be legitimized by invoking "tradition." This study shows that "tradition" is constantly being redefined in the wake of inter- and intra-household struggles over productive resources (see Hobsbawn and Ranger 1983).

Finally, research in Jahaly Pacharr indicates that major changes in customary tenure systems can take place without nationalizing or privatizing the land. While the project operates on the less politically-sensitive basis of a lease, future plans to consolidate the small-scale irrigation perimeters do not even call for a lease. This will not be necessary because land usufruct will be dependent on one factor--repayment of the seasonal loan credit. The Gambian government has already offered the rationale for this policy change by arguing that "developed" land belongs to the nation and cannot be unproductively used. In the future, irrespective of type of land ownership, access to productive resources will depend not on custom but on the ability to fulfill credit guidelines.

NOTES

1. For a more complete discussion of customary tenure, individual crop rights, and labor obligations, see Carney 1986, Chapter 6.
2. US \$16.5 million, one-third of which is funded by the International Fund for Agricultural Development (IFAD), the remainder provided by the African Development Fund (ADF), the World Food Program (WFP) and the governments of the Netherlands and West Germany. See Appendix 1 for funding structure and loan terms.
3. Gambia population 1983 census: 695,000.
4. In 1980 per capita rural incomes averaged about US \$130 in the area.
5. Fieldwork interviews.
6. Other villages are Fula and Wolof.

7. For a more complete discussion of the impact of the land allocation on gender and socioeconomic rank, see Carney 1986, Chapter 7.

8. Notably Brikama Ba and Saruja near Jahaly swamp and the Sapu agricultural station.

9. See Carney 1986 for a fuller discussion.

980). The Jaha

10. This was clearly brought out in a recent court case in Pacharr, a Mandinka village. A man divorced his wife and tried to take away her use of the tidal plot. The woman, aware of the original project decision, which stated that plot usufruct could be retained with continued village residence, decided to contest his action. In this case she had the backing of agricultural extension agents who claimed she did all the labor. The matter was adjudicated in a meeting with the district commissioner, chief, and land allocation members. They decided that since the man had a pumped plot and since it was he who divorced his wife, as long as she maintained village residence, she could farm it. Ultimately, though, the plot belongs to the household, and its use and access will depend on the male household head.

11. Most of the discussion in this section applies to Mandinka households in Jahaly, not Pacharr, swamp. Jahaly swamp has a larger pump-irrigation area (440 hectares compared to 90 hectares in Pacharr) and consequently more households with pump-irrigated land. Pacharr swamp had fewer cases of multiple plot ownership by one family as well as few cases of new tillers being given pumped land, two factors affecting labor availability in Jahaly swamp.

12. Information gathered in village interviews.

13. Seni Dabo, Jahaly Pacharr project manager in the BBC's "The Lost Harvest," 1983.

14. BBC Gobal Report, *ibid.*

15. Brikama N'Ding.

16. This discussion is based on ideas from Friedmann, 1979.

17. Primarily from Mali, Guinea, Senegal, and Guinea Bissau.

18. From western Gambia a Jola subgroup known as Karoninkas who began to rent small-scale irrigation perimeters during their seasonal treks for palm wine tapping.

19. In fact, the Jahaly Pacharr project is one of the main core support areas for the ruling political party.

20. This contention shows an ignorance of key principles conditioning upland agricultural practices in the farming system, which, among other things, involved: intercropping cereals; rotating land use between agricultural, pastoral, and fallow cycles, and changing crop sequences on one plot. Groundnut cultivation has historically been accompanied by deforestation and soil erosion due to the planting of monocropped stands and the practice of burning off the residues after harvest. Thus, while groundnuts add nitrogen to the soil, their value cannot be assessed without a relationship to the overall land use system.

22. The program began in 1985, the second year of the Jahaly Pacharr project, and involves three components: i) devaluation of the dalasi; 2) the dismissal of 25 percent of the country's civil servants and a hiring freeze on government positions; and 3) marketing reforms, which have: i) dismantled the monopoly of parastatals and ii) tied domestic consumer food prices to world market values.

23. Comparative costs per hectare (in dalasis) are available for three types of rice development programs: improved tidal rice (D 2000); small-scale irrigated perimeters (D 7500); and Jahaly Pacharr (D 25,000) in Carney, 1986.

APPENDIXES

- APPENDIX I Funding Structure of the Jahaly Pacharr Project
- APPENDIX II Explanations to Figure 2
- APPENDIX III World Food Program Rice Deliveries to Jahaly
Pacharr Project
- APPENDIX IV Questionnaire: Forms of Labor Use, Wet Season 1986
- APPENDIX V Country Data: The Gambia
- APPENDIX VI Institutions/Persons Contacted

APPENDIX I. FUNDING STRUCTURE OF THE JAHALY PACHARR PROJECT*

<u>Recipient</u>	The Republic of Gambia
<u>Executive Agency</u>	The Ministry of Agriculture and Natural Resources (MANR)
<u>Total Project Cost</u>	US \$ 16.53 million
<u>Amount of IFAD Financing</u>	US \$5.22 million
<u>Terms of IFAD Loan</u>	50 years including a grace period of 10 years with a service charge of 1 percent per annum

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	<u>Amount</u> (US \$ million)	<u>Terms</u>
African Development Fund (ADF)	4.77	Standard ADF Terms (1)
The Federal Republic of Germany	2.60	Grant
The Kingdom of the Netherlands	2.50	Grant
World Food Programme (WFP)	0.44	Grant

Contribution of the Recipient US \$ 1.0 million

Appraising/Cooperating Institution African Development Bank (AfDB)

* Project implementation period: 5 years, 1982-1987

(1) Fifty (50) years including a grace period of ten years with a service charge of 0.75 percent per annum on amounts disbursed and outstanding. Repayment of 1 percent per annum from the eleventh to twentieth year inclusive and 3 percent thereafter.

APPENDIX II

Figure 2 Explanations

FUNCTIONS AND OBJECTIVES

1. Project Coordinating Committee

Comprised of high Gambian government officials

Tasks:

- a) coordinates project budgetary issues
- b) integrates project with national agricultural plans and relevant ministries

2. Project Management Unit

- a) Extension and Training
 - training of extension staff in farming techniques, water management, etc., for dissemination to farmers
- b) Irrigation Department in charge of:
 - land development in project
 - pumping schedule
 - development of infrastructure for water delivery and gate operation
 - repair and supervision of irrigation infrastructure
- c) Accounting and Administration Department
 - preparation of accounts for each Jahaly-Pacharr donor
 - advises IFAD/project management on charges for production package
 - analyzes and controls project fund disbursement
- d) Mechanization Department
 - maintains and repairs project equipment
 - organizes supply of spare parts and fuel delivery
- e) Credit and Marketing Unit/Gambia Cooperative Union
 - handles repayment of loan credit by farmers
 - supplies farming inputs: seeds, fertilizers, rice sacks
 - offers loans for production inputs such as donkey carts, rice threshers, sickles, and tarps
 - provides storage and handling facilities for paddy rice
 - markets the paddy to government parastatal, Gambia Produce Marketing Board

3. Land Distribution Committee

The Land Distribution Committee (through the two swamp allocation committees) is the only institutional structure that links the project management to farmers.

Composition: District chief, key village headmen, and representatives of prominent farm families locally, as well as the elected members of the two Land Allocation Committees.

Duties:

- the organization of the distribution of plots in the project
- an intermediary between the project and farmers to explain procedures and management's objectives
- presents farmers' complaints to project management
- the Committee has the final responsibility to handle land usufruct disputes
- when Land Allocation Committees or villages are unable to remove a farmer from project land, the matter will be resolved by the Committee.

a) Land Allocation Committees

Composition: Jahaly swamp (13 members: 7 women and 6 men); Pacharr swamp (15 members: 8 women and 7 men)

Duties:

- Committee members in each swamp were directly in charge of the original and future land distributions
- Problems in land use or farming operations are transmitted by the members to project management
- Committee members explain changes in cropping or project procedures to farmers

APPENDIX III

WORLD FOOD PROGRAM RICE DELIVERIES TO JAHALY PACHARR PROJECT

From November 1983 to November 1984:

Milled Rice Deliveries	Purpose
832 tons	crop compensation
289 tons	Food for work (canal and bund construction)
500 tons	Food for work (canal and bund construction)

Source: UNDP, Banjul 1984

Appendix IV

Questionnaire:

Forms of Labour Uses
Wet Season 1986

Farming Systems Unit
Jahaly Pacharr Project

Village: _____

1. Name of Compound Head: _____

2. Composition of Compound Members (specify only members permanently working and living in the compound now)

	MALE	FEMALE	CHILDREN
a) Family Members	_____	_____	_____
b) Strange Farmers	_____	_____	_____
c) Koranic Students	_____	_____	_____
d) Other Non-Family Members	_____	_____	_____

Specify which type: _____

3. Number of Pump-Irrigated Plots in Jahaly-Pacharr: _____

4. Principal Farmer: Plot 1: _____

Codes for Payment: Male _____ Female _____

- C=cash
- P=paddy
- U=unpaid

MANUAL LAND PREPARATION	NURSERIES PREPARATION	TRANSPLANTING	WEEDING #1	WEEDING #2	WEEDING #3	HARVESTING	THRASHING	TRANSPORT TO CO-OP	SELLING RICE
-------------------------	-----------------------	---------------	------------	------------	------------	------------	-----------	--------------------	--------------

5. Labour Type

a) Family Male									
b) Family Female									
c) Kafo Male									
d) Kafo Female									
e) Day Labour Male									
f) Day Labour Female									
g) Women's Rice Company									
h) Strange Farmer									
i) Taliba									
j) Votex Thresher									

6. Amount of Payment

a) Dalasis Family Labour									
f) Paddy family Labour									
c) Dalasis Kafo									
f) Paddy Kafo									
e) Dalasis Day Labour Male									
f) Paddy Day Labour Male									
g) Dalasis Day Labour Female									
f) Paddy Day Labour Female									
i) Dalasis Rice Company									
f) Paddy Rice Company									
k) Exchange for Room and Food									

f: specify c=cups or b=bags

APPENDIX V

Fiscal Year: 1 July to 30 June, 1986

Area: 10,360 sq. km.

Population: 695,000 (1983)

Growth rate (1974-1984) 3.5 %

urban 6.5 %

rural pop: 77 %

Adult Literacy: 10 %

Currency Equivalents (Dec. 1985): 1 dalasi = 0.14;
US \$1.00 = 7.4 dalasis

Domestic Exports (fob) 1984

(dalasis million)

Groundnuts (shelled)	39.4
Groundnut oil	44.6
Groundnut meal	3.9
Fish and fish products	3.6

94.3

Re-exports	63.2
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Imports (cif) 1984

Food and Beverages	153.7
Manufactured Goods	56.9
Machinery and Equipment	60.7
Mineral Fuels	43.7

354.2

<u>Macro-Economic Indicators</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
GDP Dalasis million	491.4	594.4	614.6	625.1
Real GDP Growth	3.0	9.8	-10.0	-2.8

Average per capita income: US \$260.

APPENDIX VI

INSTITUTIONS/PERSONS CONTACTED

Dakar

1. David Hunsberger USAID
2. Jim Webb US AID/OMVG
3. William Duggan Ford Foundation

Banjul

1. Mees Van Krimpen Ministry of Water Resources and Environment
2. Elon Gilbert Gambia Agriculture and Research Diversification (GARD) project
3. Christine Elias GARD water resources specialist
4. Josh Posner GARD agronomist
5. Tom Hobgood USAID assistant agricultural officer
6. Ralph Conley USAID agricultural program director
7. Tom Herlehy USAID
8. Mohammed Usman World Bank consultant, PPMU
9. Baboucar Gai PPMU Statistics Division
10. Suruwa Jaiteh Freedom From Hunger Campaign
11. Dr. Anthony Wilkins Medical Research Council schistosomiasis study

Sapu Agricultural Station

1. Margo Kooyman EUROCONSULT agronomist/farming systems specialist
2. Willie Van Kampen Jahaly Pacharr agronomist
3. Seni Dabo Jahaly Pacharr project manager
4. Sanneh Jatta Jahaly Pacharr assistant project manager
5. Eliman Ndow Jahaly Pacharr/Gambia Cooperative Union liaison officer
6. Omar Janneh Madina Cooperative director
7. Daddy Dampha Pacharr Cooperative director
8. Modi Sanneh Wellingara farmer
9. Sutay Njie Jahaly Pacharr agricultural assistant
10. Kebba Touray PPMU enumerator
11. Fatou Sarr Fieldwork enumerator
12. Momodou Balajo Fieldwork enumerator
13. Laura Erikson Peace Corps volunteer, Kerewan Samba Sira
14. Glen Lanham Peace Corps volunteer, Saruja
15. K. F. Demba Agricultural superintendent on rice, Sapu Agricultural station

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CHAPTER IV

CONTRACT FARMING IN THE
OIL PALM INDUSTRY:

A COMPARATIVE STUDY OF
THE COTE D'IVOIRE AND GHANA

by

Cyril Kofie Daddieh

CONTRACT FARMING IN THE OIL PALM INDUSTRY
A COMPARATIVE STUDY OF THE COTE D'IVOIRE AND GHANA

Introduction

In much of the recent debate about Africa's economic crisis, the performance of the agricultural sector has loomed very large. The reasons for this increased prominence are readily apparent. Agriculture remains the mainstay of the political economies of much of sub-Saharan Africa, employing over 75 percent of the active labor force, contributing disproportionately to export receipts of all but the handful of oil- and mineral-exporting countries of the continent as well as providing the bulk of the basic food needs of the continent's growing population. The latter role has been largely assumed by women on the continent.

There is a growing consensus among analysts and policy makers that the performance of the agricultural sector has failed to keep pace with both the food needs of the continent and the financial requirements of the post-colonial African state. Africa has been lagging behind Asia and Latin America in per capita food production since the mid-1960s. To make up for the shortfall in production, African states have had to spend significant proportions of their export earnings on food imports as well as depend on international good will in the form of food aid. The volume of food imports grew by 9 percent per annum between 1971 and 1980 for sub-Saharan Africa, whereas the continent's agricultural terms of trade deteriorated by 7.7 percent per annum during the same period. Quite clearly, an import food strategy cannot be sustained under those circumstances.

While these and other manifestations of the agrarian and economic crisis are not open to serious debate, there is much less unanimity over the determination of the causes. For some analysts, it is the nature of Africa's incorporation into the world capitalist system and the inherent inequalities in the linkage that are largely responsible for the current crisis. To these analysts, the crisis is largely structural and requires for its resolution some measure of disengagement from the world system and increased attention to domestic and regional food needs, with emphasis on collective self reliance at local and regional levels.

This inward-looking strategy has been assailed by those analysts who believe that Africa's role in the international division of labor is justified because the continent enjoys a comparative advantage in the production of agricultural and industrial raw materials; these assailants blame Africa's economic malaise on contingent factors (drought, pestilence,

political instability, oil price hikes) and a combination of lack of political leadership and lack of managerial expertise resulting in poor execution of development plans.

Consistent with the above view, adherents advocate a continuation of Africa's inherited role, albeit with emphasis on improving price incentives for farmers, streamlining input delivery and marketing systems through privatization, and drastically reducing the role of the state to the provision of physical infrastructure, especially tarmac and feeder roads.

Whatever the reasons for the current economic and agricultural crisis in Africa, one thing is certain. The kinds of agricultural strategies implemented by African policy makers and their external associates are reflective of certain (mis)understandings about the prospects as well as problems that have faced African agriculture over the years since the attainment of formal political independence (OAU, 1979; World Bank, 1981; 1984).

The dominant official view (not always made explicit) at the time of independence was that Africa's peasant producers could not be relied upon to continue to satisfy the financial requirements of the emergent post-colonial state. Their landholdings were much too small to allow for the efficient adoption of modern technologies and agronomic practices. The gulf between the social standing of extension agents and peasant producers, the pervasive lack of numerical literacy among the latter, made communication intractable. The patchwork of landholdings as well as the dispersal of village settlements made input delivery a horrendously expensive proposition.

It was presumed that without consolidating the land under the control of the state, introducing a uniform land code, and increasing landholdings among "progressive farmers," agriculture would languish in the doldrums for a long time to come. While some states such as the Cote d'Ivoire have been largely successful in bringing much of the land under state control, others such as Ghana have had much less success in their attempts to seize control of the land. Control is still vested in traditional elites--heads of families, clans, lineages and chiefs. Whenever the higher interests of the state dictated, however, the state has been able to pressure these traditional elites to release land.

Not surprisingly, despite rhetorical support for the small farmer, the dominant strategy for dealing with the food and agricultural problems of the continent has consisted of large-scale, state-sponsored production and encouragement to private capitalist farming (Hill, 1977). As in the case of Ghana under I.K. Acheampong (1972-78), different combinations of the two strategies are possible and are often pursued in tandem. Given

official misgivings about the ability of the peasantry to generate the required productivity increases, Bjorn Beckman may be right in arguing that these dominant strategies are intended to bypass rather than transform the peasantry (Beckman, 1981; Shepherd, 1981).

Contract Farming: Premises and Promises of an Alternative Form of Production

However, state-sponsored production has been no more successful at mediating the contradictions in the political economy of agriculture in sub-Saharan Africa (Daddieh, 1984; 1987). The failure of state intervention via the state farms (Dadson, 1968) and the seriousness of the decline in production in the 1970s made Africa ripe for intervention by a number of extracontinental actors in this vital sector of the African economy. A key actor in this context is the World Bank, although other important players such as the Commonwealth Development Corporation (CDC), the European Economic Community (EEC), the German Development Agency, and the Canadian International Development Agency (CIDA) have all left their mark on this sector.

This study reports on investigations into just such an intervention by examining the oil palm industry in the Cote d'Ivoire and Ghana. Among our primary concerns were: 1) the emergence of contracting in the two countries at particular junctures and the evolution of the contracting form since its inception; 2) the premises and promises of contracting and any gaps between promise and performance; 3) conflict and conflict resolution between contracting parties; and 4) impact of contracting on local and regional political economies. Before turning to the two cases, it is worth considering in a general way contracting as an alternative form of agricultural production and the rationale sustaining its adoption.

Consistent with the dominant view of agriculture in planning ministries in Africa, but also cognizant of the existing structure of agricultural production involving millions of smallholders who cannot be easily dislodged without social and political consequences, the Bank and other external actors have sought to promote the expansion of smallholder production through contract farming and outgrower schemes. With minor modifications here and there, this intervention has involved the creation of a crop authority that provides inputs to large numbers of smallholders and markets their crops, thereby combining "support and supervision by technical field staff with collection of repayments by deduction from returns." "It is being used successfully with crops which are subject to monopoly situations and centrally processed . . ." (Williams, 1981:24). A number of projects such as those in the oil palm industry in the Cote d'Ivoire and Ghana establish their own nucleus plantations and

processing plants and then incorporate smallholders as contracted outgrowers, providing additional supplies to supplement the nucleus plantation's own output. While the methods of production are prescribed by the firm, the price at which the firm buys the crop is set by the state.

Smallholder outgrower contracting schemes promise several advantages. They promise smallholders access to inputs and technical advice that they might not otherwise secure. Although these inputs are paid for out of deductions from deliveries to crop authorities or processing firms, the cost to smallholders is reduced either because of state subsidies or because bulk purchasing of inputs results in savings that are then passed on to smallholders. Moreover, deductions from deliveries imply that the lack of cash to pay for these inputs upon delivery need no longer act as a barrier to peasant access to vital agricultural resources. There is also the promise of a high loan recovery rate under such a scheme.

Furthermore, it is anticipated that skills acquired through adaptation to modern agronomic practices involving adherence to strict timetables for planting and harvesting, for the application of specified quantities of fertilizers and insecticides, the need for keeping accounts, etc., would be transferable to other economic pursuits, with implications for higher productivity gains. More importantly, smallholders are also assured a ready market for their crops. Since market insecurities create disincentives to increased peasant production, the new buying arrangement is expected to encourage sustained peasant production.

An additional promise is that such schemes open up settlements in the hinterland to road traffic and to a host of new influences leading to social change. The new settlement patterns that have often emerged as a result of such schemes have been permissive of a more efficient provision of improved services such as schools, clinics, consumer markets, and clean water. Where contract farming involves the participation of foreign private capital, the combination of the provision of these services that are perceived to be beneficial to the local community, the active involvement of the state in securing the land, and the integration of the smallholders into the production process can mitigate some of the tensions and conflicts over land alienation and compensation (Glover, 1984).

With these premises and promises of contract farming as an alternative form of agricultural production in the Third World, we turn now to an examination of our case studies of the oil palm industry in the Cote d'Ivoire and Ghana.

Genesis of Contract Farming in the Cote d'Ivoire and Ghana

The extant historical evidence suggests that the oil palm is indigenous to Africa and has flourished naturally (unhusbanded) for centuries throughout the coastal zone. The palm tree had been a highly-valued tree crop in village communities stretching from Sierra Leone to Zaire because virtually every part of the tree could be utilized for some important purpose. Among its enduring qualities is its ability to flourish with a minimum of husbanding even in areas considered unsuited by villagers for producing staple food crops. It was permissive of intercropping (a permanent feature of traditional African farming systems) and it also seemed both indestructible and unlimited.

Its production cycle lasts for a period of twenty five years or more, producing fresh fruit year-round, although there are seasonal variations in yield. The proliferation of palm trees without any special husbanding and even in the face of continued cutting down and periodic bush fires gave the tree an ageless and limitless quality. The high-yielding varieties of oil palm currently in use in the Cote d'Ivoire and Ghana start producing after only four years, take nine years to reach peak production, provide a decade of peak harvests, then five years of declining harvests, after which a process of replanting new seedlings must be initiated (Hermann, 1981). It is, however, the end products that have made the palm tree such an irresistible crop.

The fresh fruits are processed into palm nut soup and palm oil. The red oil is used as seasoning in a number of local dishes and as cooking oil. It is also used in some village communities for the manufacture of black soap (kondu). Before the advent of the kerosene or electricity, palm oil served as paraffin for lighting indigenously manufactured lamps. The kernels were also processed into oil; this particular oil was an important traditional body lotion and medicine. It was used to rub down the newly-born and their mothers. In some communities it was customary practice to rub down the elderly before their habitual sun-bath to keep their bodies supple and youthful. It is also used to dress hard-to-heal wounds. It is also reported that the roots are burned into charcoal and given as a drink to facilitate the expulsion of the placenta (Interviews; also Boni, 1985:187-190).

The tapped sap of the oil palm is the source of the legendary palm wine that is consumed daily in Africa and features so prominently in all important traditional ceremonies, including marriages, funerals and religious offerings. Indeed, palm wine is to the village communities of coastal Africa what beer is to the urban populace.

Palm products, primarily palm oil and palm kernels, could not remain African products for very long once Europeans

discovered how valuable they were. They began to feature prominently among the emergent export commodities in EurAfrican exchange relations during the so-called Era of Legitimate Commerce. This entry of palm commodities into EurAfrican exchange relations was at first facilitated by the discovery of palm oil as a substitute base raw material for the manufacture of soap and margarine.

It is interesting to recall that among the earliest attempts at manufacturing in Africa, the processing of palm oil and palm kernels in Camerouns, The Cote d'Ivoire, Ghana, Nigeria, and Zaire predominated. The United Africa Company (UAC) and Unilever Brothers were prime participants in these efforts. But if the manufacture of soap and margarine provided the initial stimulus for European merchants to encourage the gathering and processing of palm fruits into oil and kernels, the discovery of other industrial applications of palm oil--such as glycerine, lubricating oils, wax and paraffins, and printing inks--made the oil palm an irresistible crop for careful nurturing, including scientific/genetic research by British Botanical Gardens and by the French Oleaginous Institute (IRHO).

At the turn of the century, a serious effort was made to promote oil palm production and exports in Africa. In the Cote d'Ivoire, Europeans were the first to establish oil palm estates in 1912-13; exports grew from 6,000 tons of palm oil and kernels to a peak of 22,602 tons in 1925. Prices collapsed during the depression of the 1930s and 1940s, seriously undermining exports from the country. Exports fell precipitously to a paltry 1095 tons of kernels, and no oil whatsoever, in 1947. Even the 1950 opening of an oil processing mill at Acobo did not appear to have helped the situation because smallholders in nearby communities failed to supply the mill with adequate fresh fruit. By 1959, the Cote d'Ivoire was already a net importer of palm oil (Boni, 1985; Hermann, 1981:170).

Similarly in Ghana, European demands initially stimulated the production (gathering), processing and export of these twin oil palm products. By 1880 they had become major items of trade with the Gold Coast. Exports reached an all-time peak of 20,000 tons of palm oil and 40,000 tons of palm kernels in 1884, the year of the formal partition of Africa among European powers at the Berlin Conference. After 1884, the exports of palm oil and palm kernels began an inexorable decline.

The low price offered the African peasant was the single most important reason for this decline. European merchants paid peasants very low prices because they claimed the quality of the exports was low due to inefficient preparation. The lack of adequate transport facilities inflated transport costs so that very little surplus income remained from the sale of palm oil and kernels after transport costs had been deducted.

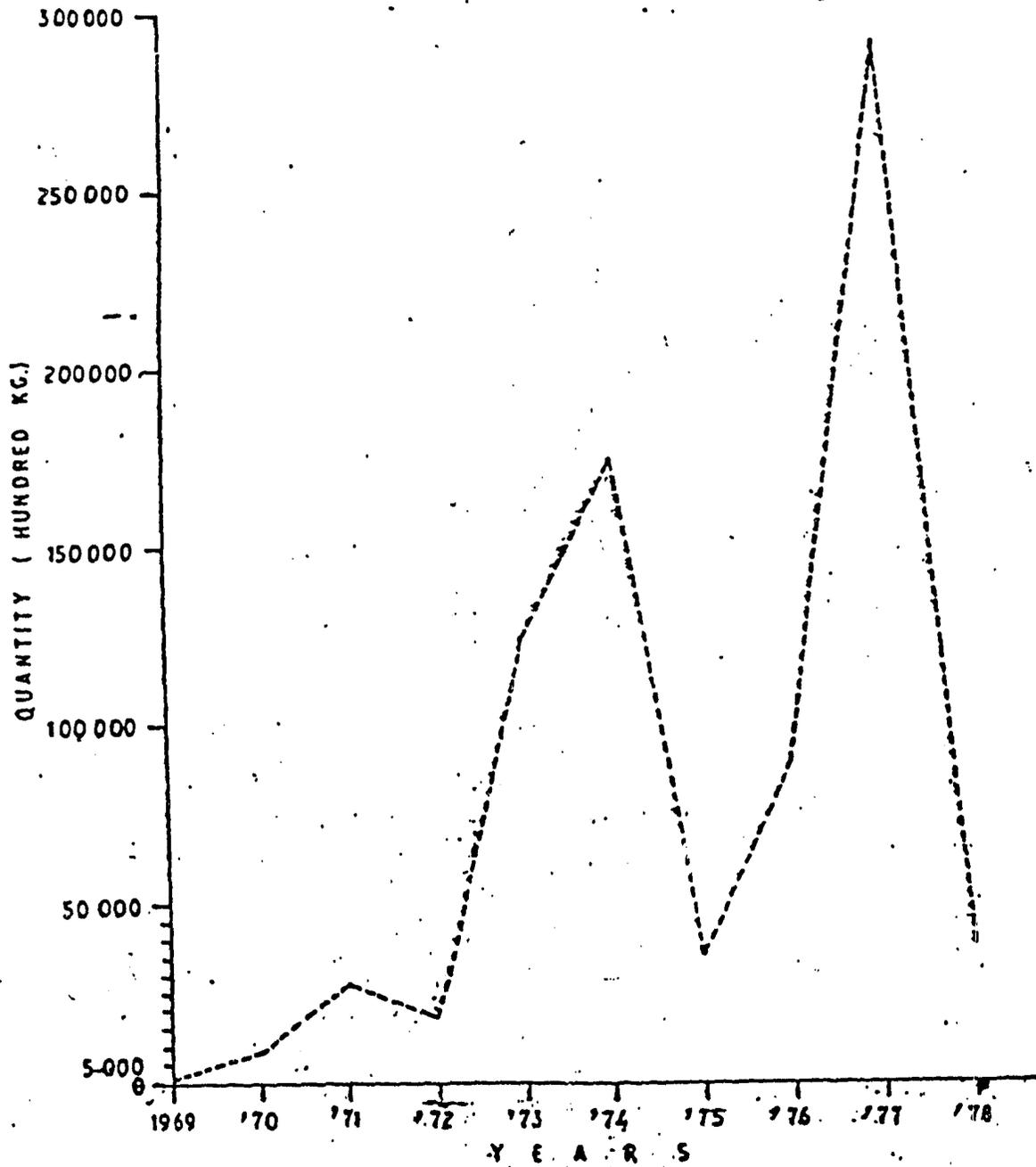
Europeans tried to revive the industry and even established the first oil palm estates in Sese and Prestea in the Western Region. In 1913, the colonial government in Ghana promulgated the Palm Oil Ordinance prohibiting the cutting down of palm trees for making palm wine in an attempt to boost oil palm exports. Notwithstanding the passage of the Ordinance and the relative success of the Prestea and Sese estates and their processing mill, the local communities seemed rather unimpressed. The importance of the crop continued to be eclipsed by another more lucrative tree crop--cocoa (Szereszewski, 1965). And so, the quantities exported never exceeded 500 tons in most years. Hence, like the Cote d'Ivoire, Ghana had become a deficit oil palm producer by 1960. The national leadership in both countries was compelled to intervene to arrest the situation.

To summarize briefly, the oil palm is indigenous to the coastal regions of the two countries under study. Palm products, primarily oil palm, palm kernels and palm wine, had always played a major role in the social, economic and religious institutions and relations of indigenous societies in both countries. They became significant items of EurAfrican exchange in the immediate post-slavery era. Despite earlier efforts by European interests in both countries to stimulate production, the impact of the depression of the 1920s and 1930s and the affluence popularly associated with alternative crops, particularly cocoa and coffee, combined to undermine the expanded production of the commodity. By the time of independence, not only had exports of palm oil from the two countries diminished rather markedly, but production could no longer even satisfy domestic demand. Both the Cote d'Ivoire and Ghana were being forced by growing internal demand to resort to importation to meet shortfalls in production. In the Cote d'Ivoire, the importation of palm oil was averaging five thousand tons during the early 1960s. The indicative figures for Ghana are reflected in Figure 1.

As the trend toward increased domestic consumption of palm oil continued in the 1960s and future projections were calculated, a number of African states were alarmed enough by the actual and potential foreign exchange losses that they decided to institute some corrective measures. In other words, the immediate background to the search for an alternative production strategy was the shortfall in production and the flight of foreign exchange that the import strategy represented. Just as importantly, both countries had inherited an agricultural economy that was heavily dependent on a single commodity, cocoa for Ghana and coffee for the Cote d'Ivoire. A major concern at independence was how to manage this colonial inheritance. The prevailing development paradigm prescribed import-substitution industrialisation and a diversification of agriculture, both of which could be achieved through the successful implementation of the oil palm strategy. Moreover, it has also been suggested that

Figure 1

IMPORTS OF PALM OIL



oil palm was less prone to the degree of price fluctuations that had come to characterize the other traditional commodities like cocoa and coffee (Hermann, 1981).

The Role of the Ivoirian State

Given the prevailing development ideology of the time and the financial requirements of the state, it is not surprising that both the Cote d'Ivoire and Ghana embarked upon an oil palm promotion strategy immediately following the attainment of independence. In 1961 an oil palm promotion strategy, the Plan Palmier, was elaborated in the Cote d'Ivoire and brought to fruition in 1963. As can be seen from Table 1, much of the gains was actually made within a very short period between 1967 and 1970. During that period, expenditure on oil palm accounted for 45 percent of all state agricultural investment in the Cote d'Ivoire. Oil palm represented the single largest state investment in the 1960s. Between 1963 and 1973, about 35 billion F CFA were invested in the oil palm sector (Boni, 1985:123).

By African or even Third World standards of relative sectoral distribution of public expenditures, the share of Ivoirian state investment going to oil palm was substantial indeed; but so was the potential for capital accumulation by the Ivoirian state and other investors. And so, roughly a decade and a half after the Plan Palmier was launched, a total of 15 industrial oil palm complexes, each complete with its own plantation (nucleus estate), processing mill, administrative block, a "city" for cadres with a center for social events, villages for mill and plantation workers, and some self-settling villages had been completed. By 1978 these industrial plantations alone covered an area of 52,000 hectares or some 57.9 percent of total oil palm plantations in the country. With the exception of those of Djibi, Frescoe, and Mopoyem, each of these integrated complexes exceeded 2,000 hectares. One of the earliest and most important of these complexes, that of Ehania, covers an uninterrupted area of 12,159 ha (see Table 2). There are an additional 17,059 hectares belonging to various private capitalist individuals and associations, either European or Ivoirian (Boni, 1985:27-31; 185).

Although the oil palm strategy has been experiencing serious financial and managerial inertia in recent years, as reflected in the deterioration of the parastatal's working capital (Table 3) or the fall in net earnings (Table 4), the success of the industrial and village planting programs is remarkable. The willingness of international capital to enter into an alliance with the Ivoirian state and provide generous funding for the program was partly responsible for this success. As Table 5 reveals, international capital provided 68 percent of the capital needed to launch the program, with the European Development Fund and the World Bank contributing 31 and 20 percent of the capital

TABLE 1

Growth of Industrial Oil Palm Plantations (ha.)

<u>Plantations</u>	<u>1963</u>	<u>1964</u> <u>1965</u>	<u>1966</u> <u>1967</u>	<u>1968</u> <u>1973</u>	<u>1974</u> <u>1978</u>	<u>Total</u>
Eloka	824	1857				2681
Anguededou		908	1927			2835
Toumanguie	454	1740	826	261		3281
Ehania			2127	8283	1749	12159
Tiegba Irobo		816	1334			2150
Tamabo			1142	1105		2247
Boubo			1953	2420		4373
Yocoboue			1406			1406
Bolo			703	2839		3542
Soubre			718	3914		4632
Dabou	1794	721	799	158		3472
Fresco				75		75
Djibi				400		400
Iboke-Dewake					6300	6300
Okrouyo					2452	2452
TOTAL	3072	6042	12935	19455	10501	52005

Source: SODEPALM-PALMINDUSTRIE

TABLE 2

Relative Distribution of Smallholder and Industrial Oil Palm
Plantations, SODEPALM-PALMINDUSTRIE, 1977-1978

<u>Groupings</u>	<u>Smallholder Plantation Size</u>	<u>%</u>	<u>Industrial Plantation Size</u>	<u>%</u>	<u>Total Size</u>	<u>%</u>
Group Abobo	9,728	76.0	3,078	24.0	12,806	100
Bingerville	1,275		2,681			
Abobo	1,323					
Attinguie	1,408					
Anyama	3,160					
Alepe	2,562					
Djibi			400			
Group Abossio	10,428	40.3	15,440	59.7	25,868	100
Toumanguie	2,831		3,281			
Adiaka	2,404					
Ehania	5,193		12,159			
Group Dabou	10,616	62.7	6,307	37.3	16,923	100
Anguededou			2,835			
Dabou	10,616		3,368			
Mopoyem			106			
Group Divo	7,089	27.8	18,425	72.2	25,514	100
Irobo			5,803			
Boubo	3,084		4,373			
Bolo	2,488		3,542			
Soubre	1,517		4,632			
Fresco			75			
Group Sud-Ouest	41	0.05	8,752	99.5	8,793	100
Okrouyo			2,452			
Iboke	41		6,300			
Dewake						
TOTAL	37,902	42.1	52,005	57.9	89,904	100

Source: Palminindustrie, quoted in Boni, L'Economie de Plantation, p. 28.

TABLE 3

Working Capital of the Palm Parastatal
1973-1979

<u>Fiscal Year</u>	<u>Parastatal(s)</u>	<u>Working Capital (billions of current CFA)</u>
1973	SODEPALM Group	0.9
1974	SODEPALM Group	3.0
1974/1975	SODEPALM Group	2.0
1975/1976	Transition to SODEPALM/ Palindustrie	- 3.1
1976/1977	SODEPALM/Palindustrie	-11.7
1977/1978	Transition to Palmindustrie	-14.4
1978/1979	Palindustrie	-16.4

Source: SODEPALM Group, SODEPALM/Palindustrie, and Palindustrie financial reports.

TABLE 4

Palmindustrrie Production, Revenue and Net Earnings

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Total Production ('000 tons) ^a	192.4	169.6	205.4	204.1	207.1
of which Palm Oil (%)	80.7	80.6	74.9	70.0	69.3
Average World Market Price (CFAF '000/mt)	124.0	153.0	160.0	166.0	314.0
Total Revenue (CFAF billion)	22.6	18.2	22.7	27.1	57.6
Net Profit (loss) (CFAF billion)	(9.3)	0.2	0.9	0.9	9.2

^a Palm oil, palm kernel oil, palm kernel cake, coconut oil and coconut cake.

TABLE 5

Sources of Capital for Planned Palm Program:
SODEPALM Group 1969

<u>Source</u>	<u>Amount (Millions of CFA)</u>	<u>(Percent of Total)</u>
Government of the Ivory Coast	7,164	22
Caisse Autonome d'Amortissement	1,203	4
National Agricultural Development Bank	<u>1,952</u>	<u>6</u>
Total Ivory Coast	10,319	32
European Development Fund	9,965	31
World Bank	6,293	20
Caisse Centrale de Cooperation Economique	2,762	9
European Investment Bank	2,527	8
Fonds d'Aide et de Cooperation	<u>119</u>	<u>-</u>
Total International	21,666	68
GRAND TOTAL	31,985	100

Source: Adapted from Jean-Francois Talon, "Le Groupe SODEPALM" (thesis for diplome d'etudes superieures, Universite d'Abidjan, October 1972), p. 78.

TABLE 6

Planned Palm Program: Aggregate Projections

<u>(In ha.)</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Total 86-90</u>
Replanting	6,984	8,031	8,691	9,459	9,409	42,574
Densification	300	300	300	300	300	1,500
New plantations	2,823	5,055	5,800	4,500	2,450	20,628
TOTAL	10,107	13,386	14,791	14,259	12,159	64,702

Planned Palm Program: Projections by Industrial Estate

<u>(In ha.)</u>	<u>Replanting</u>	<u>New Plantations</u>	<u>Total</u>
Ehania	12,006	2,250	14,256
Neka	-	7,100	7,100
Toumanguie	6,141	-	6,141*
Iboke	5,000	-	5,000*
Irobo	5,114	-	5,114
Blidouba	-	5,100	5,100
Boubo	4,258	-	4,258
Anguededou	3,555	-	3,555
Tamabo Nord	-	3,100	3,100
Soubre	2,276	-	2,776*
Dabou	-	2,470	2,470
Eloka	2,459	-	2,459
Bolo	1,765	608	2,373
TOTAL	42,574	20,628	64,702**

* 500 ha. for densification

** 1,500 ha. for densification

Source: Afrique Financement Agriculture, Mai 1986, No. 16, p. 272.

respectively. The state has just completed negotiations with international financiers for capital to enable Palminindustrie to initiate a major program of replanting between now and 1990 involving some 42,574 ha and the establishment of 20,628 ha of new oil palm plantations (see Table 6). In other words, a total of 64,702 ha of new and replanted plantations are to be established by 1990. According to Afrique Financement Agriculture, the total cost of the is \$184.9 million (70 billion F CFA), of which \$147.7 million will be spent on the plantation program: industrial plantations, \$82.4 million; small plantations, \$58.5 million and medium-sized plantations, \$5.8 million. During the first phase, \$27.3 million will also be spent on oil mills.

Palminindustrie will assume \$78.7 million of the cost of financing the new program; the Fund for Extension and Renewal (FER) will provide \$10.6 million, the small and middle peasants will assume \$28.8 million, while the EEC, the CDC, and the World Bank will each put up \$13.4 million. An additional \$26.6 million will be shared equally by the European Development Fund and the European Investment Bank (see Table 7).

In both the preceding phase and the next phase currently underway, the dominance of the industrial plantations or nucleus estates in the strategy is clearly discernible. Since these industrial plantations were managed by PALMININDUSTRIE (in which the state held 72.4 percent of the capital) on behalf of SODEPALM (which formally owned them), the dominance of these industrial plantations is coterminous with the dominance of the Ivoirian state. And yet smallholder plantations are no less significant. Indeed, smallholder outgrowers were considered an integral part of the Plan from the very onset. The European Development Fund (EDF), a major financier of the project as we shall see below, even made it a condition for its involvement that the Ivoirian Government undertake eventually to turn over the industrial plantations to smallholders. Underlying this interest in the smallholder may have been a real interest in privatizing the role of the Ivoirian state so that it would not get too entrenched in the oil palm industry. Needless to say, the Ivoirian state had no intention of presiding over the dissolution of its role and thereby relinquishing control over the major capital accumulation represented by the planned oil mills and industrial plantations (Marcussen and Torp, 1982; Marcussen, 1984; Hermann, 1981:182; Pillet-Schwartz, 1978).

State-Peasant Alliance: Compatible Interests?

Be that as it may, smallholder outgrower plantations, or plantations villageoises, have increased over the years to cover an area of 37,902 ha, representing 42.1 percent of total oil palm plantations in the Cote d'Ivoire. These are cultivated by some 8,582 smallholders and their families, not to mention some 6,000

TABLE 7

Allocation of External Financing to Major
Project Categories (US\$ Million)

	<u>CCCE</u>	<u>CDC</u>	<u>EDF</u>	<u>EIB</u>	<u>IBRD</u>	<u>TOTAL</u>
Industrial Plantations	3.4	3.6		7.2	5.3	19.5
Smallholder Plantings	2.7	2.2	13.3		2.5	20.7
Medium-sized Plantations	2.5	1.5			1.2	5.2
Oil Mills		6.1		6.1		12.2
Research	1.4				1.3	2.7
Technical Assistance	2.7				2.7	5.4
Effluent Treatment	0.7					0.7
Project Preparation Advance	—	—	—	—	0.4	0.4
TOTAL	<u>13.4</u>	<u>13.4</u>	<u>13.3</u>	<u>13.3</u>	<u>13.4</u>	<u>66.8</u>

Source: World Bank Report, p. 25

wage earners employed by these smallholders. Together with the industrial plantations and private capitalist plantations, they had increased the total of oil palm plantations in the Cote d'Ivoire to 106,963 ha by the end of 1978.

It has been suggested that the state promotes smallholder plantations because it is concerned about providing opportunities not only for peasant producers of the Cote d'Ivoire to diversify their sources of income, but also to acquire new and modern techniques of production. What may be good for the peasant is almost invariably a bonanza for the state. Diversification implies that surplus extraction from the peasantry is spread over a few more commodities so that the exactions appear less onerous. The peasants' own motivation for involvement in the scheme is primarily financial. They hope to raise their cash incomes and hence their standard of living. They would, thus, normally continue to cultivate and tend their crops for as long as the price being offered is considered just or attractive and/or other alternatives are unavailable or nonremunerative. As we shall see for the Cote d'Ivoire, the smallholder outgrower program has passed through two phases that reflect changing perceptions of the peasantry with respect to its conception of justice and the available alternatives.

Before proceeding further, we need to look at how the alliance has been nurtured over the years. The smallholder outgrower scheme involves a contractual agreement between SODEPALM-PALMINDUSTRIE and Ivoirian peasant producers in which the former undertakes to provide technical advice and supply inputs such as seedlings, fertilizer, and wire nets (used to protect the young palms from rodents) in return for which the smallholders agree to deliver their entire output to PALMINDUSTRIE. As enunciated in Article 1 of the Contract prepared by PALMINDUSTRIE, the object of the contract "is to establish the conditions for the production of the oil palm and/or coconut with the technical and material support of PALMINDUSTRIE. The planter or group of planters agree to scrupulously respect the terms of the contract. PALMINDUSTRIE will disseminate all the essential techniques and other knowledge leading to an increase in the productivity of the crop and labor." Article 3 stipulates that the smallholder applicant must meet the following requirements: be owner of the land presented to PALMINDUSTRIE and be recognized as such by the village Chief and the District Administrative Chief; candidates over 40 years of age must have a co-debtor; the land must be within a 20 km radius of a mill; must be close to a road that is motorable throughout the year; the land must be ecologically suitable to oil palm or coconut production. Finally, the planter or group of planters agrees to cultivate an area compatible as much with his labor force as with his management capability.

To the extent that the above clauses are respected, PALMINDUSTRIE undertakes under Article 4 of the Contract, "within the limit of possibilities," to assist the planter in securing financial aid or subsidies from the State and loans for acquisition of inputs and equipment from the National Bank for Agricultural Development (B.N.D.A.) In addition to providing technical advice, seedlings, and fertilizer, PALMINDUSTRIE assumes responsibility for the collection and buying of the fruits from plantations created under the contract. Harvesting and collection of the fruits require an extensive network of feeder roads whose construction and maintenance is the obligation of PALMINDUSTRIE but often subcontracted to another parastatal such as MOTORAGRI.

Other smallholder responsibilities include carrying out the orders of field extension agents, adhering to the agricultural calendar with respect to land clearing, burning, planting, weeding, applying fertilizer, and harvesting on designated dates. It is also the responsibility of the smallholders to transport the fruit to designated collection points by the roads. There is a ban on intercropping which smallholders must also uphold. Table 8 provides a schematic overview of the division of labor between SODEPALM-PALMINDUSTRIE and smallholders.

Article 21 of the Contract also stipulates that in the event that the smallholder plantation is abandoned or the owner dies, the management of the plantation will be taken over by the company until full restitution of the loans taken to establish the plantation is made. The plantation may be returned to the owner or his heirs when the company is satisfied that the smallholder himself or his heirs are once again in a position to provide proper management (see Appendix 1).

All indications are that contracting smallholders have generally complied with these regulations, especially during the early stages of planting, because that is when the parastatal can exercise the greatest leverage. Smallholders need the high-yield hybrid seedlings for planting that can only be obtained from the company. Smallholders also depend on the subsidy and cash advanced by the state and disbursed by the company in order to establish their farms. Without this financial support by the state, most peasants would not have been in a position to participate in the oil palm program (Interviews in Abidjan).

According to Hermann (1981:190), individual smallholders received a subsidy of 65,800 F CFA per hectare during the 1960s and early 1970s. The total cost of establishing one hectare of oil palm was estimated at 143,800 F CFA. In addition, smallholders received a cash advance of 20,000 F CFA per hectare from the state to cover the costs of clearing and tending their palm plantation. Smallholders were given a six-year grace period before they had to repay their 78,000 F CFA/hectare debt to the

TABLE 8

Division of Labor Between Smallholder
and SODEPALM for Cultivating Oil Palm

<u>Year</u>	<u>Farmer</u>	<u>SODEPALM</u>
0 (Year of planting palms)	Clearing land Preparing land for seedlings Sowing cover crop Planting seedlings Tending crops	Layout and spacing of seedlings Provision of seeds for cover crop Provision of palm seedlings Provision of fertilizer Provision of grillwork
1	Weeding Spreading straw Applying fertilizer Maintaining "rounds" of bare earth around each palm	Giving technical advice Providing fertilizer Supervision
2	Weeding Spreading straw Applying fertilizer Maintaining "rounds"	Supervising operations Giving advice Providing fertilizer Checking for plant disease
3	Weeding Applying fertilizer Maintaining "rounds"	Supervising operations Giving advice Providing fertilizer Checking for plant disease
4	Same as year 3 Plus: harvesting and transporting ffbs. to roadside	Same as year 3 Plus: collecting ffbs

Source: Translated and adapted from SODEPALM, "Les Plantations Villageoises," p. 15.

company, by which time their palms would be producing close to their peak. Thus, as Herman concludes, "participation in the palm program did not require smallholders to make a net cash outlay in any years" (Hermann, 1981:190).

As I indicated earlier, these subsidies, cash advances, and the price structure of the 1960s and early 1970s combined to attract close to nine thousand peasants to the scheme. By and large these smallholders lacked formal education. And although there are variations in the size of their landholdings, the vast majority are small peasants. As Table 9 indicates, their plantations range in size from 1 ha to a little over 10 ha. Smallholdings of between 2-5 ha are the most numerous. The average size of smallholder plantations is 4.41 ha. Clearly, contract farming in the Ivoirian oil palm industry has been permissive of smallholder participation, although, as indicated earlier, there are pressures to promote the middle peasantry or capitalist farmers in the next phase of the industry.

The Ghanaian Case

Like the Cote d'Ivoire, Ghana embarked on an oil palm promotion strategy soon after achieving political independence. The CPP government of Dr. Kwame Nkrumah did not require much prodding in this regard, partly because of the anticipated growth in domestic demand for oil palm and palm products in the near future, and partly because oil palm fit nicely into its industrial promotion strategy. Furthermore, the processing of various oleaginous crops, among them palm oil and coconuts, had been one of the areas singled out in Sir Arthur Lewis' commissioned report on industrialization on the eve of independence (Lewis, 1963).

Unlike the ambitious and sustained program pursued by the Cote d'Ivoire, however, Ghana's appeared schizophrenic; it seemed to oscillate between left and right ambivalence (Marshal, 1976). Under Kwame Nkrumah (1957-66), the pendulum swung clearly in the direction of state farms. The industrial/nucleus estate-smallholder outgrower combination was not unknown (Okyere, 1979), but there was an unabashed preference for socialized production under the aegis of the state farms.

According to the Ghana State Farms Corporation (Stafarms) Second Annual Report of 1963-64, "Up to and including 1963, the total acreage under oil palm was 6,126 acres. By the end of 1964 a total of 8,469 acres had been planted, an increase of about 2343 acres representing 38.2 percent. Yields from the acreage in production for 1963 were 3,103 tons of palm fruits, 1,142.58 tons of palm oil, and about 482.27 tons of palm kernels. In 1964, 4,120 tons of palm fruits were produced" (Stafarms, 1964:14).

TABLE 9

Distribution of Village Plantations by Subprefecture in 1979¹

<u>Subprefecture</u>	<u>Area</u>	<u>Percent</u>	<u>No. of Planters</u>	<u>Percent</u>	<u>Average Area Per Plantation (ha.)</u>
Alepe	1,898		458		4.14
Anyama	4,094		989		4.14
Bingerville	3,798		683		5.56
Bonoua	1,897		555		3.42
Dabou	7,909		1,756		4.50
Grand-Bassam	23		7		3.28
Grand-Lahou	329		98		3.36
Jacqueville	560		103		5.44
Sikensi	686		280		2.45
TOTAL ABIDJAN	21,594	57.0	4,929	57.4	4.38
Aboisso	3,887		913		4.26
Adiake	4,561		1,121		4.07
TOTAL ABOISSO	8,448	22.3	2,034	23.7	4.15
Divo	2,036		370		5.50
Guitry	1,778		356		4.99
Fresco	13		3		4.33
TOTAL DIVO	3,827	10.1	729	8.5	5.25
Gueyo	2,021		415		4.87
Sassandra	607		123		4.93
Soubre	1,364		340		4.01
Tabou	42		12		3.50
TOTAL SASSANDRA	4,034	10.6	890	10.4	4.53
TOTAL	37,903	100.0	8,582	100.0	4.41

¹ There was no new planting during the 1978-1979 agricultural season.

Source: Statistiques rurales 1979.

Much of that production of fruits was processed into palm oil by the Stafarm Mill at Sese in the Western Region. The palm kernels, amounting to a paltry 550.71 tons, were exported to overseas markets in 1964. Since there was still a great deal of scope for increased production, it was proposed to bring the total acreage under Oil Palm to 16,063 by the end of 1965 (Stafarms, 1964:14). While peasant producers were encouraged to diversify their production by cultivating oil palms, no special institutions and programs were devised to nurture their participation beyond rhetorical encouragement.

Rural development received a lot more fanfare as the basis of development under Dr. Busia's Progress Party government (1969-72). However, Busia and his military predecessors seemed more eager to sell off the state farms to private capitalists than to streamline their operation for efficient production or to distribute them to small farmers. Following the six year interregnum of the Ankra military and Busia civilian rule (1966-72), Acheampong responded to continuing declines in oil palm production and subsequent palm oil imports by initiating The Special Agricultural Scheme, an adjunct of the twin Operation Feed Yourself (OFY) and Operation Feed Your Industries programs. Under this scheme, private companies whose profits had not been repatriated because of lack of foreign exchange were asked to forgo repatriation in the short term by reinvesting their accumulated surplus in agricultural projects in the country either on their own or in partnership with indigenous investors.

The Acheampong military government was clearly in favor of large-scale capitalist or commercial production although, as they all do, it did recognize the continuing role of "traditional small-scale farms." The premise for this preference was that "undoubtedly, commercial farming admits of the use of modern techniques which in turn result in higher yields per acre." As the Budget Proposals for Fiscal Year 1974/75 of the National Redemption Council put it (Min. of Finance, 1974:21-22):

The unfortunate aspect of the country's agriculture, however, is that its massive support of the economy can be attributed to only one crop--cocoa. The country still continues to spend a sizeable portion of its hard-earned foreign exchange on food imports. Due to lack of raw materials, most of which can of course be grown locally, quite a sizeable number of our industrial plants operate at about 50 per cent below their installed capacity. The Government cannot sit idly by in such a situation.

To this end, the Government is determined to ensure that the third phase of the O.F.Y. program achieves the targets set for it. Important among these are the production of (a) more food to feed the people, (b) sufficient raw materials for our industries, and (c) cash

crops for export. This is obviously a herculean task to which the country has set itself, and its successful accomplishment will naturally require extensive mobilization of our resources in terms of manpower, capital and technical know-how.

The Role of the Ghanaian State

The Acheampong government was convinced that foreign capital could be cajoled to deploy its enormous financial resources and technical expertise to the benefit of the Ghanaian state and nation. This alliance was to be forged between international capital and the private Ghanaian capitalist class, brokered by the state itself. Thus, Ghanaian participation in the equity of all projects undertaken under the program was to be not less than 40 percent. Where the Ghanaian partners are not available the Government would enter into a partnership with interested foreign investors and the Government's equity holding under such circumstances will be 40 per cent. Quite clearly, the role envisaged for Ghanaian capital in this context is one of being a junior partner despite the Government's claim that it was "in line with its policy of self-reliance."

To facilitate the intended alliance between foreign and Ghanaian capital on the one hand and the state on the other, the State undertook to secure the required amount of land for these new commercial farming ventures by alienating communal lands through its Executive Instrument. The acquired land would be leased by the state to interested companies at considerably less than their market value. Additional incentives were also provided to sugarcoat the alliance with international capital in the form of generous tax breaks and exemptions from duties on capital imports. As spelled out by the Government (Min. of Finance, 1974:23), these tax and other concessions included:

- (1) Automatic exemption from payment of import duty and levy on machinery and equipment.
- (2) Automatic tax holiday for 5 years.
- (3) Prompt granting of import licences.
- (4) Guaranteed immigrant quota.
- (5) Waiver of Selective Alien Tax.
- (6) Accelerated depreciation for plant, building, equipment, dams, access motorable roads and other capital works.
- (7) Exemption of management staff from tax relating to furnished accommodation on the farm.

What about the future transfer of the accumulated dividends of those companies that would opt to participate in the alliance? Special transfer facilities were created by the state that were intended to accelerate the transfer of those dividends. Oil palm was particularly attractive to these foreign companies because it

was singled out for special treatment. The relevant formulation is that: "Where the crop cultivated by an investor has a gestation period of more than one year, such an investor will, for the first 5 years of the gestation period, be granted an annual transfer (out of accumulated dividends) of 5p per C1.00 invested. The same facility will apply to any additional investment made for the expansion of the project. In the special case of oil palm plantation the rate of transfer shall be 15p per C1.00 investment" (Min. of Finance, 1974:23).

Peasant-State Alliance: Contract Farming in Ghana

In this balancing off of the interests all various classes including the international bourgeoisie in Ghana, the state under Acheampong could not bypass even the peasantry with impunity. For unlike the Cote d'Ivoire where much of the land for the oil palm program had been carved out from already established forest reserves or from land minimally suited to the cultivation of cocoa, coffee, or food crops (Boni, 1985:27), the Ghanaian plantations were actually going to expropriate land owned by the peasantry. To create a stake for the Ghanaian peasantry so that the expropriation of their land might be a less bitter pill to swallow, the state made the incorporation of outgrowers into these projects one of the cardinal conditions for their approval.

As the Government noted (Min. of Finance, 1974:22):

To ensure Ghanaians' involvement in the scheme the large-scale farms would provide for outgrowers. In this system of farming the foreign companies would be expected to undertake nucleus farms capable of producing certain critical levels of output. The investors would then provide finance and technical services to a group of farmers who would cultivate similar crops, the output of which will be marketed through the outlets of the business houses.

The state would broker the relationship between the Ghanaian peasantry and the investors by establishing minimum guaranteed prices for all commodities cultivated under the scheme. These prices were to reflect the prevailing international prices and production costs.

To sum up, in both the Cote d'Ivoire and Ghana the history of prior production, the availability of land suited to production, the growing gap between internal demand and supply, the potential for accumulation, and the fact that promotion satisfied import substitution industrialisation, all predisposed the new states and external associates toward promoting oil palm production and processing. In the Ghanaian case, there was the additional incentive to create conditions for the short-term postponement of repatriation of accumulated dividends.

Consequently, the role of the state and international capital was preponderant in both cases.

A Tale of Three Projects

Benso Oil Palm Plantation (BOPP) Limited

It is in this context that three major oil palm development projects were evolved in the Western, Central and Eastern Regions with the active participation of the Ghanaian State. BOPP, situated at Adum Bansa, about 42 km north of Takoradi in the Western Region, is a joint U.A.C. International-Ghana Government venture and managed by U.A.C. The site for the project was acquired by the State under an Executive Instrument dated September 23, 1976 as part of its equity and leased to BOPP for a period of 50 years at a rent of C1.50. The rent was said to be subject to review after 10 years. The total acreage agreed upon was to be not less than 12,000. By Executive Instrument No. 121 of 8th October 1976 as amended by Executive Instrument No. 65 of 1977, the State compulsorily acquired 16,750 acres for use by BOPP.

In accordance with the concessions anticipated under the Special Agricultural Scheme, the Heads of Agreement granted BOPP a five-year tax exemption, with the added proviso that any loss incurred thereon might be carried forward to commence with the first financial year of BOPP in which its output of oil palm exceeded 1,000 tons. The State also agreed to prompt granting of adequate import licence applications as well as the necessary immigration quotas to enable BOPP to employ an expatriate staff of seven.

Additional services to be performed by the state under the Agreement included the provision of adequate communications including a direct telephone connection (on normal commercial terms) and either direct postal collections and deliveries or convenient access to the public postal service; construction and maintenance of local roads permitting access to the plantation and capable of supporting heavy truck traffic (undertaking does not extend to the plantation's internal roadways, the construction and maintenance of which will be the sole responsibility of BOPP). The State also undertook to grant BOPP all such licences as may be necessary to enable it to generate its own electricity for the purposes of its business and to supply ancillary housing.

Of particular interest to our research was the fact that the agreement provided for the development and maintenance of the following facilities by BOPP to encourage smallholder outgrower production:

1. Provision at cost of suitable seedlings
2. Advice on cultivation
3. Guaranteed purchase of all fruit grown by outgrowers and delivered by them to the mill (at such prices as shall from time to time be determined by the Board of BOPP)
4. Sufficient capacity in the mill to process fruit purchased from outgrowers.

The agreement also stipulated that BOPP shall be required to support a maximum of 3,000 acres under smallholder outgrower cultivation. Fully a decade after the Agreement was signed, however, BOPP has not provided the kinds of services, particularly those enumerated above, which help to promote smallholder outgrower participation. All indications are that BOPP has no intention of promoting outgrower production. BOPP's attitude is conditioned by the fact that it has been able to procure adequate fruit both from its own estate and from deliveries by Twifo Oil Palm Plantation (TOPP) and peasant producers in the area. In 1982 BOPP provided transportation to area peasants producing fruits, enabling them to deliver their fruits to the mill. In 1983 the transportation service was curtailed, although BOPP was still taking fruits from producers who could organize their own transportation to the mill. The increase we observe for 1983 from private peasant producers in the area was not due to a reinstatement of the transport service but rather to peasant dissatisfaction with Kerekou, a private Ghanaian competitor to BOPP. Peasant producers complained to us that payment for fruits was often delayed, and they also suspected cheating by Kerekou agents who weighed the fruit.

BOPP was clearly preferred over Kerekou because the company paid the price set by the state, which was a little bit higher than that offered by Kerekou. However, in the Adum Bansa area, transportation was the single most important constraint on deliveries. Since Kerekou provided the much needed transportation, most peasants had no choice but to accept his price, payment schedule, and weight declarations. The 1984 figures represent deliveries largely by middle peasants who had the means to organize transportation to BOPP. Some of the fruit purchased by BOPP in 1985 was from the middle peasants in the area. Much of it, however, was from the venture in the Central Region, Twifo Oil Palm Plantation (TOPP), which was awaiting the construction of its own mill. Since March 31, 1986, BOPP has stopped purchasing from private smallholders because of a mini crisis in the Ghanaian oil palm industry--the glut of palm oil on the market.

The fact that the UAC has reneged on its outgrower obligation is serious enough, but it is hardly the only drawback

of the Agreement. In November 1983 an official memorandum acknowledged that the State's share of the company, based in large part on the valuation of the land that was subsequently leased to the Company, was inadequate, "bearing in mind the cost of acquiring the land," but went on to suppose that the lease would have to be executed. In fact, the cost to be borne in mind is several times over the C1 million valuation that was the basis of the Ghanaian state's equity. Ironically, BOPP could occasionally pose as the champion of area peasants, as evidenced by a BOPP management letter dated January 26, 1983 and dispatched to the Secretary for Finance:

As per letter attached dated 21.1.83 farmers in Sections 15 to 22 and supplementary have not been paid compensation for their crops, although the compensation has been worked out since 1979.

We request that payment of compensation is made as it is overdue, and in order that farmers may enjoy their dues.

The issue is, of course, more complex. Delay in the payment of land and crop compensation is only part of the underlying tension that has characterized the relationship between local peasants, their chiefs, various local spokespersons, a motley of law chambers and all three companies on the one hand and the state on the other. The assessment of the actual value of various crops and the land itself has stimulated much conflict and litigation. As one Chamber, Osekre, Ofei & Co., argued in a letter to the Chief Land's Officer on November 24, 1977, "Clients not accepting the amount of compensation based on rates which were fixed in 1946, i.e. 50p for matured cocoa tree and 25p for oil palm respectively." The letter goes on to say that since the prevailing price of oil palm and cocoa seedlings was not below one cedi each, "our clients say that they're willing and prepared to accept C5.00 for each oil palm and cocoa tree destroyed."

One of the more ill-advised aspects of a program designed to achieve self-sufficiency and encourage the participation of Ghanaians is the destruction of two large-scale operations owned and managed by Ghanaians. One of them, Fadetco, had 300 acres of oil palm at Adum Bansa. In 1976, the plantation was 5 years old and some of the trees were already bearing fruit. The other, Tranquility Farms, initiated in 1972 in response to OFY, consisted of 80 acres although the total holdings amounted to 787 acres. At the time of the destruction in 1976, the company had been granted a loan by the Agricultural Development Bank to expand cultivation from 80 to 200 acres. The destruction not only cost the State C2.5 million in assessed compensation for the two ventures and added to its financial burdens resulting from the alliance with UAC International, but it revealed in greater relief that in the struggle between local and international

capital, the state under Acheampong served the dominant interest of international capital.

Twifo Oil Palm Plantations (TOPP) Limited

Like BOPP, TOPP grew out of the economic and political requirements of the Ghanaian state that involved meeting increasing domestic demand for palm oil out of local production and staving off profit repatriation pressures from foreign companies in the mid-seventies. Even more than BOPP, TOPP involves an alliance between the state and a variety of local branches of international capital, Mobil Oil Corporation of the U.S., now known as Mobil Holdings (UK) Limited of the USA (Mobil); Paterson Zochonis & Co. UK, now known as Paterson Zochonis Plc. of UK (P.Z.); Paterson Simons & Co. (Africa) Limited of UK (PASICO). Together these companies have 12.15 percent of the shares in TOPP. By far the largest shareholder is the Central Regional Development Corporation (CEREDEC), which currently enjoys 85.1 percent of the shares in the company.

The international financier of the plantation development and management is the EEC by way of a ECUS 12,863.00 loan to the Government of Ghana. The mill, with a processing capacity of 20 tons of fresh fruit bunches per hour and scheduled to begin a test run in December 1986 and actual operation in March or April 1987, is constructed with funding from CDC (f3,000,000.00), De Nederlandse Investeringsbank Voor Ontwikkelingslanden N.V. (N.I.O.) of the Netherlands (Dfl 10,000,000.00) and the Nederlandse Financierings--Maatschappij Voor Ontwikkelingslanden N.V. (F.M.O.) of the Netherlands (Dfl 9,000,000.00).

TOPP began its lease on life with a feasibility study conducted by a CDC team and accepted by the Ghana Government in 1975. The report resulted in the founding of TOPP as a private company. Currently the largest agro-industrial complex in the Central Region of Ghana, it will comprise an oil palm estate of 4,800 ha, equipped with a 20 ton per hour mill when fully operational.

To facilitate the cultivation of oil palm fruits for processing into palm oil, the state acquired 10,000 ha of land in the Twifo-Hemang Traditional Area, some 70 km north of Cape Coast under the Hemang Lands (Acquisition) Decree 175 "NRCD 332 of February 21, 1975." To date, 3,700 ha of land have been cultivated. An additional 1,100 ha of land are expected to be cultivated with oil palms by the end of the first quarter of 1987.

In contrast to BOPP, TOPP has a clear program of smallholder outgrower contracting. The smallholder scheme is controlled and managed by CEREDEC, although TOPP is responsible for providing

planting materials, technical advice, training of extension personnel, and is obligated to purchase smallholder fruits through CEREDDEC. The fruits are to be collected by TOPP, weighed and recorded in the field, and sold to the mill. Loan deductions and payment for management services will be made from the revenue from fruit sales. Under the scheme, 300 farmers are intended to be allocated a total of 1,500 ha, although financing had been difficult to arrange and the planting had fallen behind schedule. Each smallholder is to be allotted 5 ha, of which 4 ha will be devoted to oil palms and the remaining 1 ha to food crops. Table 10 provides some indication of present achievements and future projections.

The selection of smallholders is based on the decision of a committee made up of:

- 1) the District Administrative Officer;
- 2) the Chief of the area;
- 3) the Chief Farmer;
- 4) the Scheme Manager;
- 5) a representative of CEREDDEC.

The selection criteria are as follows:

- 1) someone who has lost land to the project;
- 2) a healthy and physically fit person;
- 3) a married person with children;
- 4) who has knowledge of farming;
- 5) in the age range between 21 and 45, but preferably between 28 and 35.

In 1983 an initial group of 20 peasants was selected to participate in the smallholder scheme, but as only 44 ha oil palm were planted in Phase 1, only 11 people were allocated plots--8 male and 3 female. They were all area residents and all had lost land to the project. The average age of the group was 56 years, the youngest being 45 and the eldest 67 years of age. Two-thirds were between the ages of 50 and 60. This median age was undoubtedly too high, given the hard physical labor involved in oil palm production and the long-term debts that are contracted under the scheme. Their recruitment was a calculated attempt at cooptation. It was felt that involvement of these traditional notables would help to defuse the hostility toward the project and win new converts. If the case of the GOPDC (analysed below) is anything to go by, the profile of smallholders is not likely to deviate much farther from this first group, in spite of what a report by TOPP suggests. There is likely to be a smattering of women smallholders, but the scheme will still be dominated by men; the median age will drop slightly, but it will still remain relatively high for reasons that are explained later; most of the smallholders are likely to have very little formal education.

TABLE 10

**Twifo Smallholder Oil Palm Project
Present Situation and Development Schedule**

	Pre-project period			Project Development Schedule ¹				Total
	End of 1984	End of Sept. 1985	Expected by end of 1985	1986 (yr.1)	1987 (yr.2)	1988 (yr.3)	1989 (yr.4)	
Land cleared (ha.)	155	205	230	150	350	350	350	1,500
Oil palm planted (ha.)	124	164	184	80	320	320	280	1,200
Food crops' plots (ha.)	31	41	46	20	80	80	70	300
No. of Smallholders	31	41	46	20	80	80	70	300

¹ Schedule as presented in Draft Financial Proposal

An interesting organizational variant of the contracting arrangement is that CEREDDEC actually clears and plants the smallholder land and nurtures the palm trees for about 8 months before allocating the land to the smallholder. In contrast to the Cote d'Ivoire, the creation of a functioning Smallholder Association is made an integral component of the peasant-company relationship. For that is the way in which TOPP intends to implement its incentive policy involving the delivery of one-third of the palm oil to smallholders at wholesale prices.

As it may have been apparent from the foregoing analysis, the TOPP-CEREDDEC arrangement represents an institutional innovation. It might be recalled that CEREDDEC is by far the largest shareholder in TOPP. The percentage of shares held by CEREDDEC has actually grown over the years while other shareholders have been unable (or unwilling?) to increase theirs. CEREDDEC shares are, in reality, Government of Ghana shares that in turn are international loans voted to TOPP in the form of equity held by CEREDDEC. Thus far at least, the relationship has proved more vexing than innovative. While a UK management consulting team, Harrison Fleming Advisory Services Limited, manages TOPP under contract from the EEC, CEREDDEC, a Regional Development Agency, controls and manages the Smallholder scheme. Understandably, the Regional Manager is jealously guarding the project as the brainchild of CEREDDEC. Meanwhile, planting materials and technical inputs are expected to be provided by mill management. Needless to say, progress on the smallholder contracting scheme had been very slow partly because of unresolved tensions between TOPP and CEREDDEC management and the lack of disbursement of funds for the smallholder project.

Meanwhile, TOPP aspires to provide as complete a system of productive and social infrastructure as is financially feasible in order to attract and maintain a steady labor force. Hence, a comprehensive program aimed at providing employees at all levels with suitable accommodation has been initiated. The program envisages the construction of 33 executive bungalows, 44 supervisor and senior clerical quarters, 166 staff and 500 laborer quarters. As in the Cote d'Ivoire, these would be locationally separated in the north, south, and center of the project. A proposal to have CEREDDEC initiate a similar housing program on farms belonging to contracting smallholders has been shelved because it is feared that the subsequent deductions from the sale of fruits might alienate the peasants from the scheme, even assuming that the requisite financing could be marshalled.

To sum up, TOPP has a rather embryonic smallholder contract farming infrastructure controlled and managed by CEREDDEC. In contrast to BOPP, however, both TOPP and CEREDDEC are unequivocally committed to the expansion of the smallholder contracting scheme, provided external funding for it can be attracted and sustained.

Ghana Oil Palm Development Corporation (GOPDC)

By far the most important Ghanaian project as far as smallholder contracting is concerned is the Ghana Oil Palm Development Corporation (GOPDC). It is a World Bank-Ghana Government Joint Project situated in the Kade-Kwae area of the Eastern Region of Ghana, some 90 miles northeast of Accra. It is meant to be operated as a full-fledged corporation. In contrast to the other two projects, therefore, there exist no Heads of Agreement for GOPDC. It was established by Executive Instrument 1000. But that in itself is not an asset; the tension between Ghanaian peasants and the state over the primary object of production; the land, is not predicated on the type of instrument that is utilized to acquire it. Thus, although the State has acquired 21,000 acres, peasants have blocked access to some portions of the land by the corporation.

Notwithstanding the intractability of the land acquisition problems, GOPDC had managed to meet its first phase projections by the closing date of December 31, 1982. By the deadline, a total of 5,143 ha had been cultivated, compared to a targeted total of 5,200 ha (including about 1,200 ha under smallholder/outgrowers). Some 320 peasant households are participating in the project as smallholders/outgrowers. Harvesting of fruits began in December 1982 on the nucleus estate and in June 1982 for some smallholders. When the second phase of the project is completed some time in 1990, the nucleus estate and smallholder/outgrowers will each comprise 3,850 ha for a total of 7,700 ha. The total number of employees would then increase to 2,000 from the current figure of 1,800, and smallholder/outgrower population would increase to 1,150 households.

As already indicated, GOPDC is a more bona fide nucleus estate and associated smallholder type of operation. This case has a lot more in common with the Ivoirian examples we examined than with the TOPP. Perhaps this is not by accident, since the plantation manager and other expatriate management staff had actually worked in the Ivory Coast. In contrast to the Ivoirian case, however, these smallholders are not owners of the land but rather tenants cultivating land belonging to the corporation and leased to them for the sole purpose of producing oil palm for the corporation.

The original project design anticipated that each contracting smallholder would be given 20 acres, of which 17.5 acres were to be devoted to oil palm production and the remaining 2.5 acres reserved for food crop cultivation for meeting household food needs. While the "pioneer" smallholders were allocated 20 acres each, latecomers (1981-82) had to make do with 10 acres (2 for food crops) because of lack of land availability

following a freeze on portions of the acquired land as a result of ongoing litigation.

Land clearing, burning, planting of oil palm, and the sowing of cover crop seeds were the responsibility of the smallholder/outgrower. These are all very laborious tasks requiring a great deal of physical strength and/or lots of farmhands. It is for this reason that the criteria for selection of smallholders/outgrowers are virtually identical in both TOPP and GOPDC as well as in the Ivoirian case. It explains the insistence that the smallholder/outgrower must be married and have children (the more the merrier) living at home. The initial size of the family was set at seven: man, wife and five children. That criterion has apparently been relaxed.

The notion of household labor was even more critical in the Ghanaian than in the Ivoirian case because in contrast to the latter, which continued to enjoy an abundant flow of relatively cheap labor from the Sahel, labor shortage had become a very serious bottleneck in the Ghanaian agricultural system. Consequently, labor was not only expensive, but area residents who were not participating in the scheme were notoriously averse to selling their labor power to their neighbors. Furthermore, the corporation was eager to prove the lucrativeness of the venture and attract increased peasant participation. If smallholders/outgrowers had to turn to the volatile labor market the effect would be to lower smallholder returns and create disincentives that would surely lead to violations of the contracts.

The smallholder/outgrower agrees to "develop and maintain the farm in accordance with the Conditions laid down by GOPDC from time to time." Some of these conditions stipulate that planting of palms should be completed by July 30th of the planting year; no planting of cassava is allowed; no plantain should be encouraged; and puereria planting is compulsory. Inter-row weeding is said to be "compulsory" for all smallholders and must be performed 3 times a year at 4-month intervals. The schedule for circle weeding is the same as that of inter-row weeding but circle weeding is said to be "obligatory" (see Appendix II).

For its part, the corporation provides such services as survey and pegging, and it employs chainsaw gangs to fell and log the trees. The project also provides cover-crop seeds, oil palm seedlings, fertilizer, wire nets and field boots (a coveted item on the plantation). Collection of the fruits is organized by the corporation and deducted from smallholder/outgrower sales.

GOPDC offers a few other social amenities such as a clinic and an elementary school. The clinic is opened to everybody in the area. However, while the services are "free" for factory and

estate workers, area residents have to pay user fees. The clinic is superintended by a nurse on location and is visited by a medical officer who is in residence every Wednesday. Enrollment in the school, on the other hand, is currently restricted to children of the nucleus estate.

GOPDC enjoys tremendous leverage over the smallholders/outgrowers. In contrast to SODEPALM/PALMINDUSTRIE, GOPDC's leverage extends several years beyond the planting stage. Unlike Ivoirian smallholders who are owners of the land on which they cultivate the oil palms, the Ghanaian smallholders (though not the outgrowers) are tenants. As such, they were more susceptible to coercion by GOPDC management. Recalcitrant tenants could, indeed, be kicked off the land. The corporation's files contain several examples of just such threats being issued by management. Moreover, the fact that the development of the smallholder plantation takes place in phases increases the coercive power of the corporation. As the contract affirms:

- (1) Development of the 4 ha should be by recommendation by GOPDC depending on the previous performance of the Smallholder. Thus development of 4 ha is NOT AUTOMATIC.
- (2) Thus, Smallholders who fail to maintain the 3 ha to a satisfactory standard and did receive 3 (three) previous warnings from the Plantation Manager would not be recommended to continue the development of the 4 ha for the Phase 2.
- (3) Smallholders who have been recommended to develop the 4 ha but do not complete heaping and burning by the 30th April of the second year of planting will have his/her plot reallocated (see Appendix 2, p. 3).

While the lease agreement details the obligations of the tenant and penalties to be applied by GOPDC in the event of default, it is silent on possible sanctions against the corporation in the event of a breach of contract. And breaches there have been, according to our interviews with smallholders/outgrowers. The most frequently cited ones include nondelivery of seedlings so that smallholder plantations go unplanted and plantations that burned down as a result of one of West Africa's worst droughts in 1983 have not been fully replanted because of lack of seedlings. In Coker, one of the participating villages, we were informed that even after seedlings were not supplied for land that had been cleared, the food crops planted there by smallholders were ordered to be destroyed. Meanwhile, some officers of the corporation were asking for a 50 percent share of the maize that had been planted. Collection of fresh fruit in bulk (ffb) was reported to be irregular, leading to rotten fruits. Collection agents demand "dashes" before collecting fruits; sometimes several trips to the estate to inform them is

required; weighing of ffb is done in the absence of smallholders or their representatives. Other non-lease grievances included: rude corporation officers; lack of building materials for farm houses even after the brick factory was established; lack of transportation to and from smallholders' plantations; and finally, a perception that GOPDC is more interested in outgrowers than in smallholders.

One of the central concerns of this research is to ascertain the identity of those who are participating in contract farming and their motivation for doing so. In other words, we were interested in the socioeconomic background of contracting smallholders/outgrowers. Is the contracting arrangement biased in favor of capitalist farmers and/or urban elites (the so-called weekend planters of the Cote d'Ivoire or the telephone farmers of Nairobi, Kenya?). Or are peasant producers well represented? What is the relative distribution of landholding, and what are the attendant implications for income generation and rural social differentiation? Or, put in another way, what is the impact of contracting on individual households as well as on area political economies?

Summary of Survey of Smallholders/Outgrowers: Ghana

We interviewed a random sample of 140 smallholders/outgrowers in eleven villages in the Kade-Kwae area in the course of several months. In our sample there are 100 male and 11 female smallholders and 22 male and 7 female outgrowers. What follows is a summary of those findings that shed some light on the questions raised above.

Our sample indicates that the vast majority of the smallholder/outgrower population have received very little formal education. Of our male population only 2 have had a university education; 8 have secondary/technical school education and 13 are graduates of teacher training colleges. The rest have had no formal education whatsoever (the majority) or have gone through the middle school (no predictor of functional literacy). Of the 18 women in our sample, 4 have had no formal education, 7 terminated after primary school, and another 7 completed middle school. Thus, although there are indications that the Ghanaian literate community has been supplementing its income through various forms of agricultural pursuit, it has not penetrated the GOPDC project. Here, oil palm production remains largely a preserve of local residents without formal education.

What they do have in abundance is several decades of farming experience, particularly in cocoa and food-crop production. Between them, they share several hundred years of farming experience. Only 14 of our male sample and one female had less than 10 years of farming experience each. Each of the rest had more than 10 years' experience, with those enjoying more than 25

years of farming experience clearly dominant. The same is true of our female population, with 5 of them enjoying between 26 and 30 years of experience and another 5 topping 30 years and more.

As can be expected from this experiential longevity, our smallholder/outgrower population is well advanced in years. The 51-60 and above 60 age cohorts are the single most important groups, with 33 and 26 males and 9 and 1 females respectively. The 46-50 category is also fairly well represented with 20 males and 5 females. While our sample contains no females under 40, there were a few males in that category. Three of them were under 30, 12 were between the ages of 31 and 35, and another 7 were between 41 and 45. As is true of the agricultural sector as a whole, the oil palm sector is dominated by people not only with less formal education but they are also aging. We think that this age structure is symptomatic of the control exercised by traditional elders over the distribution of land under traditional tenure arrangements as well as of the criteria for the selection of participants in the project. This is not to say that the criteria were wrong; on the contrary, they were sensible and have probably helped to defuse an otherwise tense situation. They lead, however, to the kind of age structure that might pose problems for productivity down the road.

Consistent with the age structure and the requirements of the industry itself, we might expect that most of the contracting peasants would be married. Indeed, all with the exception of a 75 year old male and 6 females are married. Another female said she was divorced. According to our sample, 20 of the men had 2 wives each; another 3 had 4 wives each and 2 more had upwards of 4 wives. The majority were monogamous. Not surprisingly, over half (72 men and 10 women) each had between 5 and 9 children. Another 36 men and 2 women had over 10 children. While only 12 men and one woman indicated that they receive no help on the plantation from these children, the rest did use the labor of wives and children in establishing their plantations. The availability of household labor, the age of the plantations, coupled with the fact that labor is less readily available for hire and is also expensive have militated against the widespread use of hired labor. Our data show that only 19 smallholder/outgrowers employ wage labor. Seven males and two females employ between one and two workers; five males and one female employ more than five workers; and four males employ between three and four workers. While this should be comforting to project management for now, it is instructive that the third most frequently mentioned investment aspiration behind education (for one's children) and continued farm maintenance is the desire to hire labor (to maintain the plantation).

Wives were particularly important in meeting the food needs of the household on the acreage set aside by the project for that very reason. Since intercropping was so pervasive, so central to

peasant conception of food security here, it was important that the project adopt such a strategy if it was to then insist that smallholders/outgrowers refrain from engaging in the practice. And it may have worked in ensuring peasant compliance (there are several indications that this was observed more in the breach), but its long-term impact on rural hunger is, at best, uncertain. Already, close to a quarter of our sample does not cultivate food crops and not more than ten people sell on any significant scale (we were told that the area set aside for food production is often the least fertile part of the plantation). This does explain the brisk food market that is developing on the estates and in the area and the persistent demands/petitions for food through the World Food Program.

As for the social background and general orientation of those who were attracted to the contracting scheme, we have already indicated that GOPDC fulfilled its intention to draw people with previous farming experience. To be sure, as in the case of TOPP, a handful of area chiefs have been coopted to give initial respectability to the contracting scheme, but there was no indication that they had been given larger acreages or favored in the allocation of scarce inputs. In addition to farmers displaced by the project, contracting has attracted people with quite a catholic spread of other occupations. A female and fourteen male teachers have abandoned that noble profession to join the ranks of contract farmers. Five drivers, including one formerly with GOPDC, have also joined. Others include a former GNTC storekeeper, a retired Machine Operator for Akosombo Textiles, a Security Officer for Consolidated African Security Trust, a Field Assistant in the Ministry of Agriculture, a former Planter at the Oil Palm Research Institute, 3 laborers with the Forestry Department, another retired Machine Operator with the Ghana Fibre Industry, 2 tailors and 2 seamstresses, an active Reverend Minister (one of 6 absentee planters we uncovered), a former timber contractor, a retired mass education officer; a Union Carbide personnel manager, a retired electronic technician from the military, a field assistant, headman and assistant plantation manager (employees at GOPDC before their moonlighting was snuffed out), a retired policeman, a dispenser, and a mason.

Survey of Outgrowers in Ehania, the Cote d'Ivoire

Researchers interviewed a random sample of 52 outgrowers in the Ehania complex, one of the oldest complexes in the Palminindustrie ensemble. The structure of participation revealed some unanticipated surprises. One of these was the strong representation of a younger generation of producers in the sample. Those interviewed ranged between the ages of 23 and 61. There were 26 producers under the age of 40 and another 26 above 40 years old. The Ivoirian producers of oil palm in the Ehania sample are evenly split between those who are under 40 years of age and those above 40, with the largest concentration of

farmers, 11 altogether, between the ages of 41 and 45. The youngest planter was 23 years old, the three oldest planters were 60, 61, and 67 years old.

The pioneer outgrowers (those whose participation in the Plan Palmier dates back to the early 1970s) have relatively larger total landholdings than the newcomers to the industry. Each of the 13 Ehania area outgrowers who had participated prior to 1976 had total landholdings between 6 and 10 hectares, and another 12 owned more than 11 hectares. Not surprisingly, they devoted a much larger proportion of their total landholdings to oil palm production.

By contrast, a majority of those who came into the industry in the post-1975 period owned between 6 and 10 hectares. This is clearly an indication of diminishing land resources in an area of heavy commodity production, but it is also worth noting that although only 5 farmers in the post-1975 generation of the sample owned more than 11 hectares of land, these were also by far the largest landowners. Together, the five of them owned a total of 109 hectares, an average landholding of 21.8 hectares, which is far above the norm in the area. Two of these farmers owned 34 hectares each; another two owned 23 hectares each and a fifth farmer owned 18 hectares.

While this pattern of land distribution in the Ehania area does indicate some measure of rural social differentiation based on land ownership, it is not to be equated with the emergence of a planter bourgeoisie. The data here are consistent with the evidence furnished by J.-M. Gastellu and Affou Yapi (1982) to challenge the notion of a planter bourgeoisie. They remind us that these larger farmers participate directly in the production process even if they do not perform the most arduous of the farming tasks. They have not engaged in the extended reproduction of their farms. They are not different from the population of their villages either by social origin, educational level, or age.

Eight of the planters in the pre-1975 category devote between 3 and 5 hectares of their landholdings to oil palm production. Another 13 own between 6 and 10 hectares each of oil palms whereas 3 have oil palm farms of more than 11 hectares. What is equally important is that the pre-1975 category of planters still keeps a significant amount of land under other cash crops, especially cocoa and coffee. Indeed, 12 of the planters have between 3 and 5 hectares under cocoa/coffee. Another 4 planters have between 6 and 10 hectares under cocoa/coffee. An equal number of planters, 9 in number, have committed as much land to cocoa/coffee as they have to oil palm. The relative newcomers, too, have a diversified cash crop mix.

This may well be one of the most important distinguishing characteristics of West African peasant behavior. Unless compelled by constraints of ecology and/or land and labor availability, African peasant producers have a tendency to hedge against the likelihood of the terms of exchange going against them by diversifying their sources of income through simultaneous participation in several commodity-producing activities. It reflects a desire to hedge against crop price collapse or the vagaries of the weather and plant diseases. The mix, however, makes it virtually impossible to calculate the impact of participation in the oil palm industry on individual household and community welfare in a milieu in which accounts are not kept separately for commodities, if kept at all. The researchers gave up trying to estimate income data from recollections of these farmers.

In conformity with this orientation, peasant producers also pay some attention to meeting their basic needs of foodstuffs. Given the intensified competition for land and labor--increasingly scarce resources within the household and community--few commodity producing households are able to meet their subsistence needs from their own farms. In our sample roughly half of the planters interviewed indicated that they produced enough food to feed their families, while another half said that they did not. They were thus dependent on the market for many of their subsistence needs. There are three reasons frequently cited for the discrepancy between this primordial peasant orientation to subsistence needs and the ability to meet them: 1) the small size of food farms; 2) the neglect of food farms because of labor constraint and 3) large families. Of those families who were having difficulty meeting their basic needs from farms tended by their families, 15 cited the small size of food farms, followed by 11 who cited the labor constraint leading to farm neglect, and another 7 who saw the large size of their families as representing too many mouths to feed.

The majority of farmers cultivated considerably less food than they did cash crops. Most food farms were under 2 ha and were meant largely for subsistence. When it is recognized that 24 of the planters in the sample had a family size of between 5 and 9, another 15 planters had over 10, and only 13 had a family size of between 1 and 4, it becomes clear why producing families can at best only hope to meet their own subsistence and not produce a surplus for the market, and why, in fact, many have to depend on the market for their basic food needs. Paradoxically, one of the very conditions that make it possible for peasant households without a lot of capital to engage in successful commodity production--a reasonably large family to provide labor support services--also imposes serious limits on overall income levels in the countryside, and hence on rural capital formation, because so much of what is earned is spent on food and other household obligations.

The dependence on the market for basic food needs is one indication of the penetration of the cash nexus into the Ivoirian countryside. It is also a reflection not just of the penetration of capitalist relations of production in the countryside but its coexistence with precapitalist modes and relations. While sons continue to work for their fathers and wives for their husbands without pay, such familial labor contributions are supplemented by hired labor on a fairly regular basis. By contrast to our Ghanaian sample, only 3 farmers in our Cote d'Ivoire sample did not employ wage labor. All three, incidentally, are migrant or stranger farmers. Moreover, only 2 of the sample did not receive regular help from family members. One of the two is a school principal. Given his status in the community, the fact that his landholdings were the largest in our sample, and that he was one of only 2 farmers hiring 4 agricultural workers on a permanent basis, it is not surprising that family members were not involved in the production process.

Furthermore, the modalities of compensation combined both precapitalist and capitalist elements/forms. One of the more interesting aspects of this combination is reflected in the diversity of modes of payment of agricultural wage earners. No minimum wage legislation is respected in this case, a situation generally considered to be to the advantage of agricultural workers since nationally-legislated minimum wages are notoriously low. Various combinations are identified. In some cases the wage laborer is lodged and fed. In some he is housed but not fed. In some cases the arrangement calls for a monthly payment. In still others, wage earners are paid yearly. In some cases, especially cocoa/coffee farmers, the laborers are partly compensated in the form of a third of the crop. In other words, a great deal of flexibility is introduced into wage labor employment.

Moreover, just as sons and wives may be compensated at a later date for unpaid labor services through a gift of land or a portion of a farm, so migrant workers may come to transform themselves into peasant producers in their own right through the hospitality of their hosts. In our sample 10 of the farmers were strangers: 2 were from Burkina Faso, 1 from Mali and the rest were Ivoirians from outside the region. Indeed, gifts and inheritance made up by far the largest proportion of land transfers in the area. Only 5 people in our sample indicated that they had actually bought land from village elders. What explains the involvement of Ivoirian peasants in the Plan Palmier?

Asked why they entered the oil palm industry, most of the planters replied that they were attracted by the monthly income it brought. While most farmers still see cocoa as more profitable, they welcome the steady income that oil palm brings

throughout the year. Another important influence on peasant willingness to engage in oil palm production is the fact that palm oil is a traditional staple. Both implicitly and in practice, farmers are aware that there exists an alternative market for palm fruits and that in the event of sustained unattractive prices being offered by the state, they could turn to it (see Fraternite Matin's cartoon on the subject).

In fact just such a situation occurred in 1974-75 when so much of the oil palm was diverted and sold on the open market that Palminindustrie faced the worst production crisis in its history. In other words, while the state and Palminindustrie exercise a great deal of leverage over the producers through the contract and pricing mechanism, producers of palm fruits have occasionally taken covert, individualized action to defend their interests. Again, sale on the parallel market, and neglect of farms, the two most important actions by oil palm producers, are covert and individualistic rather than collective class action. The answers to our question on the desirability of an oil palm growers' association belied two basic tendencies among the Ivoirian peasantry. In contrast to the Ghanaian cases where either Management (TOPP) was actually seeking to institutionalize a Growers' Association as part of the normal channels of communication between the peasantry and itself, or the smallholders had taken the initiative on their own (GOPDC) and used it to pressure the state, plantation management, and headquarters through numerous letters or memos to meet certain demands/needs, virtually no one in our Ivoirian sample had thought about that possibility. In any case, upon reflection, most thought it was not necessary or that having one would not make any difference.

Impact of contract farming in the Cote d'Ivoire and Ghana

It is much too early to tell exactly how important the impact of the three schemes we have examined in Ghana will be on the national and regional political economies. Certainly the state is counting on them to save the country some foreign exchange in the short term and in the long term even stimulate foreign exchange earnings through exports. A successful program of oil palm development would also help to diversify Ghanaian agriculture and reduce dependence on cocoa. If the Ivoirian experience is anything to go by, this outcome is certainly possible. Although Ivoirian exports are still heavily dominated by cocoa and coffee, palm oil and palm kernels, along with bananas, rubber, and pineapples, have provided additional revenue for the state (see Table 11). The oil palm program has been permissive of important extraction from the peasantry and accumulation by the Ivoirian state through the mediation of the Caisse, the price setting and, in the case of oil palm recently, the marketing arm of the state.

TABLE 11

Summary of Landholdings Devoted to Cash Crops in 1979 in the Forest Zone

Departments	Coffee	Cocoa	Oil Palm	Coconut	Rubber	Banana	Fresh Pineapple	Frozen Pineapple	Total
Abengourou	84,000	89,000	-	505	149	1,855	15	-	175,524
Bondoukou	68,500	55,000	-	-	-	-	-	-	123,500
Abidjan	85,500	122,000	29,729	15,769	17,309	5,580	10,290	8,670	294,847
Aboisso	70,500	29,500	15,868	5,914	-	1,609	300	-	123,691
Adzope	50,000	58,000	-	-	-	78	240	-	108,318
Agboville	25,000	31,500	-	-	-	2,086	1,950	-	60,536
Bouake	102,000	33,000	-	120	-	-	3,000	-	138,120
Dimbokro	186,000	75,500	-	-	-	-	-	-	261,500
Bouafle	116,500	42,000	-	-	-	-	-	-	158,500
Daloa	165,000	115,000	-	344	-	-	-	-	280,344
Divo	77,000	138,500	25,514	-	-	-	900	-	241,914
Gagnoa	53,500	85,500	-	552	-	-	-	-	139,552
Danane	65,500	10,500	-	-	-	-	-	-	76,000
Biankouma	21,500	3,000	-	-	-	-	-	-	24,500
Guiglo	39,500	6,500	-	144	-	-	-	-	46,144
Man	85,000	14,000	-	-	-	-	-	-	99,000
Sassandra	56,500	38,000	8,793	7,248	12,955	-	-	-	123,496
Total	1,351,500	946,500	79,904	30,596	30,413	11,208	16,695	8,670	2,475,486
Percentage	54.6	38.2	3.2	1.2	1.2	0.5	0.7	0.4	100.0
Percentage of total landhold- ings of forest zone	8.2	5.7	0.5	0.2	0.2	0.07	0.15		15.02

Source: Boni, L'Economie de Plantation en Cote d'Ivoire Forestiere, p. 37.

Quite clearly, the Ghanaian program has a much longer road to travel before this objective is achieved. GOPDC is already concerned that the cost structure of the industry will not allow the corporation to be competitive on the world market unless the price paid for fresh fruit bunches is significantly rolled back soon. In this context, it must be recalled that the Ghanaian state has been surprisingly more supportive of the peasantry engaged in oil palm production relative to other peasant producers. The current price for palm fruits is more than remunerative. Our guess is that after the industry becomes self-reproducing prices will start to decline. There are already pressures in that direction. This outcome is all the more likely since even the Ivoirians have been finding it difficult in recent years, because their cost of production is significantly higher than that of the nearest competitor, Malaysia (see Table 12). In the interim, international loans are being contracted that will have to be paid for sooner or later.

Meanwhile, at the local level, the schemes have created serious social dislocation for those whose crops had been destroyed before adequate valuation and compensation had been made and especially for those whose villages were destroyed and are still awaiting resettlement elsewhere. For other villagers, the projects have opened a window to the outside for them. Feeder roads that have been constructed to villages as result of the projects are going to be maintained permanently; that is, as long as the projects exist. This system of feeder roads has opened the villages to increased motor traffic, with all that implies for the exchange of commodities and "revolutionary" ideas.

In the Cote d'Ivoire, from 1963 to 1979, a total of 5,000 km of feeder roads were opened up by SODEPALM-PALMINDUSTRIE, costing 35 billion F CFA. Five mechanized road work brigades had to be created for the task. Villages had to be constructed from scratch and equipped with electricity, water, cultural centers, churches, markets, etc. These have been replicated on a smaller scale on the industrial estates in Ghana. What Ghanaian villagers are demanding is an extension of some of these services to their communities. Their hostility toward the projects would probably remain undiminished for as long as they perceive themselves to have been "exploited" by the state.

As indicated earlier, one of the major influences on peasant participation in the oil palm industry in both countries is the regular monthly income it makes available. For the most part, this prevents the problem of liquidity that is faced by many rural populations and allows them to plan their expenditures better. Overall, significant capital has been injected into the rural economies of the Cote d'Ivoire as a result of the oil palm program. SODEPALM-PALMINDUSTRIE is reported to have channelled almost 8.4 billion F CFA to smallholders in payment for fresh

TABLE 12

Cost of Production of 1 ha. of Smallholder Plantation in 1979 (in FCFA)

<u>Age of Plantation</u>	<u>n-1</u>	<u>n0</u>	<u>n1</u>	<u>n2</u>	<u>n3</u>	<u>n4</u>	<u>n5</u>	<u>n6</u>	<u>n7</u>	<u>n8 & n9</u>
1-Expenditure										
a. Tools	1,350	1,350	675	226	225	650	650	6,950	26,950	30,950
b. Clearing	50,000	22,500	25,000	15,000	12,500					
Planting										
Weeding										
Fertilizer										
Harvest						14,500	16,500	19,000	20,500	22,500
Total	51,350	23,850	26,175	15,225	12,725	15,150	17,150	25,950	47,450	53,450
2-Gross Revenue		8,000 ¹	3,000 ¹	3,000 ¹	3,000 ¹	38,000 ²	55,000	80,000	100,000	120,000
3-Net Revenue		-15,850	-23,175	-12,225	-9,725	+22,850	+37,850	+54,050	+52,550	+66,550

¹ Suvention SODEPALM² Production

Source: Boni, L'Economie de Plantation, p. 348.

fruit bunches during the period 1966-79 after deducting for debt service to the company of 580 million CFA and cash payments for tools, fertilizer and field hands (Hermann, 1981; see Table 14).

While this gross income is important, most observers are agreed that the program has failed to ameliorate rural income distribution, cultivation techniques, or peasant incomes. Most of the benefits have accrued to larger and more profitable plantations whose proprietors tend to be urban- or semi-urban-based weekend farmers rather than local peasants. Boni (1985:360) has calculated that about 40 percent of smallholders' income is spent on labor and other inputs. The rest is spent on the household budget as well as on occasional expenses and luxuries.

The level of peasant income is partly a reflection of lower yields on smallholder plantations relative to those on the industrial estates or on plantations belonging to proprietors who have important non-agricultural sources of income and partly a reflection of the exactions of the state. Lower yields and the price at which the state buys the fresh fruit bunches make it uneconomical for labor to be hired year round, as they have to in the oil palm industry. Indeed, next to larger proprietors, farm hands seem to reap the most benefits from their involvement. Under these conditions, it is not surprising that our Ivoirian investigation in the Ehania area turned up hardly any labor-saving technologies owned by these smallholders.

Summarizing the 1973 work of Pillet-Schwartz in the Ebrie region surrounding the Eloka oil mill, Hermann (1981:198-199) wrote:

In spite of SODEPALM's efforts to modernize peasant agriculture, Ebrie farmers generally adopted oil palm without altering their traditional pattern of social activity. Ebrie men customarily devoted only about one-sixth of their day to agriculture. Rather than augmenting the total amount of time they spent on cultivation, local peasants spent less time on their other crops, or--their preferred solution--hired field hands. Employing agricultural laborers had paid handsome dividends in coffee and cocoa cultivation. Unfortunately, the returns per hectare of oil palm make field hands uneconomical on all but the largest holdings. Furthermore, laborers for oil palm must work year round: a more expensive proposition than hiring laborers for a few months to help cultivate and harvest coffee or cocoa during the peak season.

A single field hand earned about 06 thousand CFA per year in 1972, more than the average gross revenue that year for a hectare of producing oil palm.

A most serious consequence of the oil palm program is the reduction in the area under food crop cultivation as a result of the disappearance of the forest. Although the ecological implications of deforestations are important and have begun to be felt in the Cote d'Ivoire and Ghana, it is the attendant food situation that is more worrisome. Food purchases have become necessary and important for most smallholder households. With the massive deforestation attendant upon the expansion of the oil palm program and the intensification of commodity production more generally in the southeast and east of the Cote d'Ivoire, food crops have become less plentiful and more expensive. Considerable amounts of domestic staples are still produced in the East, but the distance from large populations or the consumer market and the high transportation costs, makes their impact on the food situation uncertain (Boni, 1985:390-392).

One of the factors affecting food availability is that the new crops are not grown in association with food crops. We have seen how Palminindustrie, TOPP and GOPDC all prohibit the intercropping of food crops. While the Ghanaian project designers have sought to mediate the consequences of this interdiction by setting aside one or two hectares for food crops, the output of these plots is not enough to feed participating families. Because the scope of the Ghanaian program is still limited, it is possible to stimulate production from contiguous nonparticipating communities so that a sustained market in domestic staples can take hold. The periodic market on the estates is a start in this direction.

In sum, the Plan Palmier has generated important foreign exchange revenues for the Ivoirian state, promoted diversification of agricultural exports and the establishment and expansion of agroindustry, and channeled resources into rural areas; but it has not significantly raised the incomes, hence the welfare, of its smallholder population. The lack of an appreciable increase in the incomes of all but a few true wealthy planters (these have accumulated in part because they have other plantations under cocoa and coffee cultivation), has meant that little technology is transferred and adopted. The Ghanaians, for their part, hope to replicate the success of the Ivoirians without any of the deleterious side effects. All indications are that they will have a much tougher time of it.

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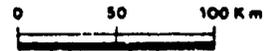
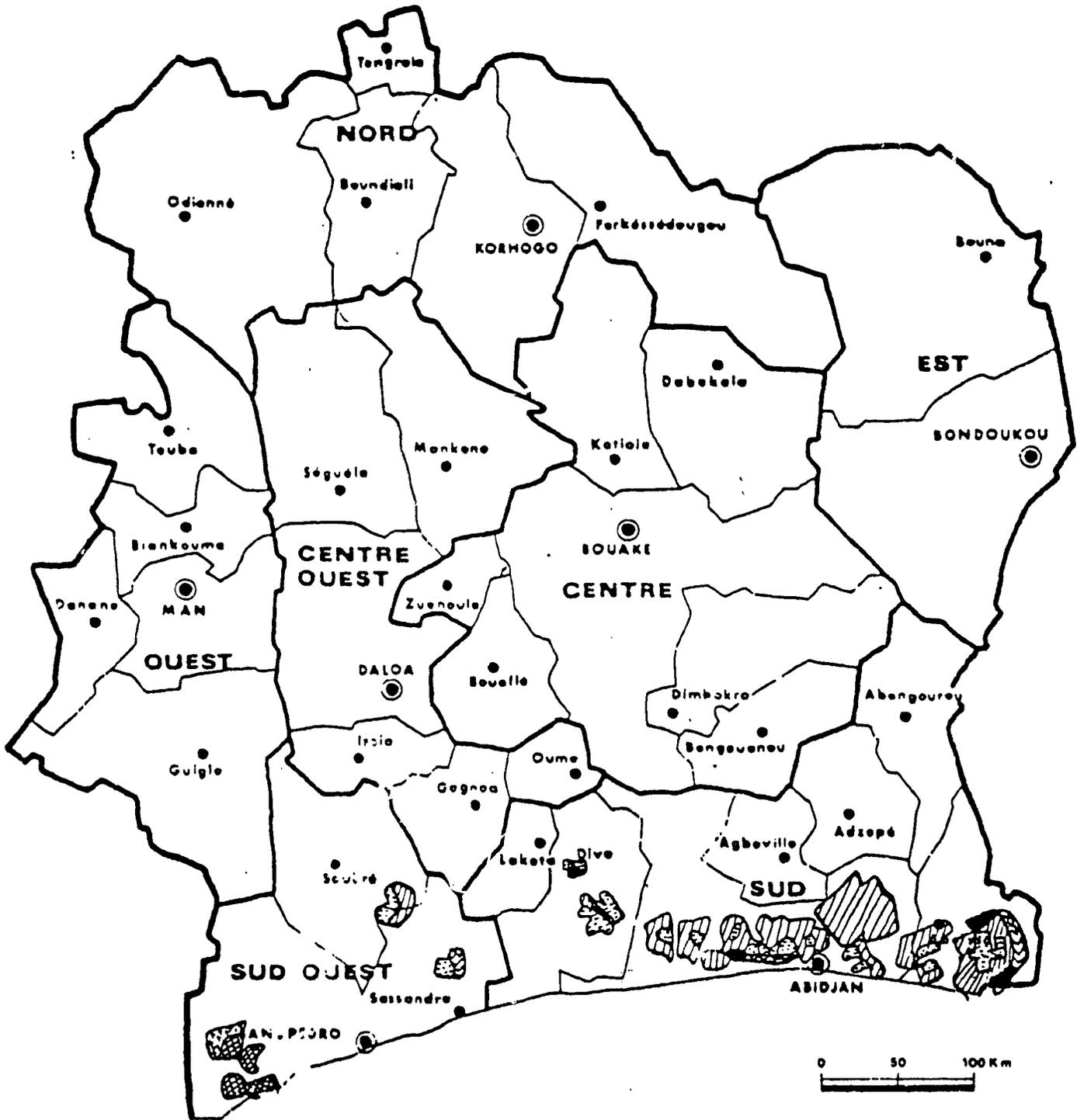
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THE IVORY COAST



- Limite de département
- Limite de région
- Chef-lieu de département
- Industrial & village plantation complex
- Village plantations
- Industrial Plantations
- Extention in Industrial & village plantations
- Extention in Vil. Plant.

A PARALLEL MARKET
FOR OIL PALM FRUIT



Source: Fraternité Matin (28 May 1980).

Scene: A marketplace.

Government Agent: "But you, SODEPALM farmer--this is where you are selling your palm nuts??!"

Farmer: "Yes! If the government won't pay well, what else can I do?"

Il est convenu ce qui suit:

ARTICLE 3

CONDITIONS GÉNÉRALES

La demande du candidat-plantateur pour être agréée doit satisfaire aux conditions suivantes:

Etre propriétaire du terrain présenté à PALMINDUSTRIE et être
comme tel par le Chef de village et le Chef de la circonscription
ministérielle de la localité;

Présenter un co-débiteur pour les candidats de plus de 40 ans d'âge;

Avoir son terrain situé à un rayon égal ou inférieur à 20 kms autour
de la huilerie de PALMINDUSTRIE;

Etre situé à proximité d'une piste carrossable toute l'année;

Le terrain présenté doit satisfaire aux exigences pédologiques et topo-
graphiques du palmier à huile ou du cocotier.

Le planteur ou le groupement de planteurs garantit l'exploitation d'une
parcelle correspondant tant à sa disponibilité en force de travail qu'à ses
capacités de gestion.

365

ARTICLE 4

FINANCEMENT DES OPÉRATIONS

Pour autant que les clauses du présent contrat soient respectées,
PALMINDUSTRIE s'engage, dans la limite des possibilités, à aider le
plantateur ou le groupement de planteurs de palmiers et/ou de cocotiers à
tenir:

De l'Etat, les aides ou subventions prévues,

De la B.N.D.A.

- les crédits de campagne nécessaires à l'acquisition des in-puts;
- les crédits pour l'acquisition des biens d'équipement.

**OBLIGATIONS
DE PALMINDUSTRIE**

PENDIX 1

ARTICLE 5

CRÉATION DE L'EXPLOITATION

PALMINDUSTRIE apportera au planteur ou au groupement, l'appui
technique nécessaire pour la mise en valeur des superficies concernées.
A cet effet, elle s'engage à fournir le matériel végétal ainsi que les matériels
et in-puts dont le financement (sous forme de prêt remboursable ou
d'avance gratuite) aura été accordé par ailleurs.

Ces fournitures seront cédées suivant les dispositions spécifiques
consignées dans un document et acceptées par les intéressés à l'occasion
de chaque campagne.

ARTICLE 6

CONDUITE DE L'EXPLOITATION

Dans le cadre de la conduite des exploitations, PALMINDUSTRIE met
à la disposition du planteur ou du groupement de planteurs, l'encadrement
leur permettant de maîtriser les opérations techniques conduisant à
l'accroissement de la productivité de leur travail et à l'amélioration de leur
revenu.

ARTICLE 7

Au plan de la lutte phytosanitaire, PALMINDUSTRIE assure le contrôle
et donne les conseils pour les traitements nécessaires au maintien du bon
état sanitaire des plantations.

ARTICLE 8

PALMINDUSTRIE s'engage à assurer la collecte et l'achat des régimes
et du coprah dès l'entrée en production des plantations dont la création
a fait l'objet du présent contrat.

ARTICLE 9

Dans le cadre d'un groupement de planteurs de palmier à huile et/ou de
cocotier, PALMINDUSTRIE s'engage à l'aider le cas échéant dans sa
gestion administrative et financière.

ARTICLE 10

PALMINDUSTRIE s'engage à fournir aux institutions financières du
pays, notamment la R.I.D.A., les éléments techniques nécessaires à
l'octroi de crédit de création, d'extension ou de campagne au bénéfice du
plantateur ou du groupement.

OBLIGATIONS DU PLANTEUR OU DU GROUPEMENT

ARTICLE 11

Le planteur s'engage à exploiter lui-même ses terres.

ARTICLE 12

Le propriétaire non résidant ou le groupement s'engage à désigner les personnes physiques qui seront en permanence sur l'exploitation pour l'exécution de toutes les opérations culturales demandées par PALMIN-
DUSTRIE.

ARTICLE 13

La ou les personnes physiques désignées s'engagent à obéir aux agents d'encadrement sur le terrain et à exécuter toutes les tâches qui leur seront demandées.

ARTICLE 14

Le planteur, le groupement, ou le co-débiteur mandataire s'engage à respecter scrupuleusement, sur l'ensemble des parcelles de palmier et/ou de cocotier, les directives suivantes :

ACTIVITÉS	PÉRIODE
- Nettoyage sous-bois - Abattage - Ebranchage - Tronçonnage	De Septembre à Janvier
) - Brûlage - Rabattage du brûlis - Semis grains de couverture - Préparation des piquets	De Janvier à Mars
- Piquetage - Trouaison	De Mars à Mai
- Planting - Pose de grillages	15 Mai à 15 Juillet
- Eradication des mauvaises herbes, ronds - Epanchage d'engrais	Août à Novembre
) - Rond - Rabattage de la plante de couverture - Remplacement - Epanchage d'engrais	Janvier à Sept.
) - récolte aux dates fixées et aux rythmes	s sur
) -	ords" juées

ARTICLE 15

Pour faire face à toutes les exigences, tant techniques qu'économique inhérentes à la culture du palmier et du cocotier, le planteur ou le groupement s'engage à respecter le calendrier agricole et les échéances d'acquisition des équipements et des matériels tel qu'il aura été défini par PALMIN-
DUSTRIE.

ARTICLE 16

Le planteur ou le groupement s'engage à ne pas pratiquer de culture intercalaires en dehors de celles qui sont autorisées par PALMIN-
DUSTRIE et suivant les normes techniques prescrites.

ARTICLE 17

Le planteur ou le groupement s'engage à rembourser la totalité des prêts consentis par PALMIN-
DUSTRIE à partir de la deuxième année de récolte et souscrits dans le cadre de l'opération jusqu'à remboursement complet.

ARTICLE 18

Le planteur ou le groupement s'engage à livrer la totalité de sa production à PALMIN-
DUSTRIE.

ARTICLE 19

Afin de faciliter les opérations financières, le planteur ou le groupement opérera, par une demande adressée à la Direction Générale de PALMIN-
DUSTRIE,

- a) - Pour un virement bancaire
- b) - Pour un paiement à vue.

ARTICLE 20

Le planteur par le présent contrat, s'engage à accepter que le recouvrement de sa dette envers PALMIN-
DUSTRIE soit effectué par précompte automatique au moment de la paie.

ARTICLE 21

En cas de déchéance constatée par abandon de la plantation, ou par décès du planteur, l'exploitation et la gestion de la plantation reviendront à PALMIN-
DUSTRIE jusqu'au remboursement total des prêts engagés pour sa création. La parcelle reviendra au propriétaire ou à ses ayant droits après que PALMIN-
DUSTRIE ait établi que celui-ci (ou ceux-ci) sont en mesure d'assurer son ex

ARTICLE 22

Le planteur ou le groupement s'engage à ne pas se livrer à des abattages ou à des ventes parallèles sans une autorisation expresse de PALMIN-DUSTRIE.

ARTICLE 23

Tout manquement à ses engagements de la part du planteur ou du groupement, entraînera la perte de sa qualité "d'encadré" avec le cas échéant une poursuite judiciaire.

Fait à le

Lu et Approuvé

Le planteur et son héritier (ou son co-débiteur) ou le groupement (signature de 3 Délégués dûment mandatés).

Le Directeur Général de
PALMINDUSTRIE

Vu pour accord
Le Sous-Préfet

Vu pour accord
Le Chef de Village

APPENDIX 2

EXECUTIVE INSTRUMENT

E.I.30

STATE LANDS (KWAE-SITE FOR GHANA OIL PALM
DEVELOPMENT CORPORATION) INSTRUMENT, 1976

WHEREAS the Supreme Military Council is satisfied that special circumstances exist by reason of which it appears to the Council to be expedient that the land specified in the Schedule to this Instrument should be declared under subsection (1) of section 1 of the State Lands Act, 1962 (Act 125) to be land required in the public interest and the Council hereby declares that it is so satisfied:

NOW, THEREFORE, in exercise of the powers conferred on the Supreme Military Council by subsection (1) of section 1 of the State Lands Act, 1962 (Act 125) as amended by the State Lands Act, 1962 (Amendment) Decree, 1968 (N.L.C.D.234) this Instrument is made this 11th day of March, 1976.

1. The land specified in the Schedule to this Instrument is hereby declared to be land required in the public interest.
2. This Instrument shall be deemed to have come into force on the 5th day of September, 1975.

SCHEDULE

All that piece of land containing an approximate area of 22119.87 acres situate at Kwae in the West Akim Abuakwa District in the Eastern Region of the Republic of Ghana lying to the North-West of Otumi Village and to the East of Mamang River Forest Reserve and bounded on the North-east by Akim Abuakwa Lands measuring on that side 20,200 feet on the South-east by Akim Abuakwa Lands separating it from Otumi Village measuring on that side 47,200 feet on the South-west by Mamang River Forest Reserve and Aiyola Forest Reserve measuring on those sides a total distance of 23,750 feet and on the North-west by Akim Abuakwa Lands measuring on that side 44,600 feet which piece of land is delineated on Plan No.LD.8816/53946 attached hereto and thereon shewn edged pink.

N.B. The land the subject matter of the above-mentioned Executive Instrument is now vested in the Supreme Military Council on behalf of the Republic of Ghana free from any encumbrance whatsoever.

A copy of the Plan referred to in the Executive Instrument may be seen during business hours at the Offices of the Chief Lands Officer Cantonments, Accra and the Clerk of Council, ASAMANKESE LOCAL COUNCIL, ASAMANKESE.

Any person claiming a right or having any interest in the land the subject matter of the above-mentioned Executive Instrument or whose right or interest in any such land is affected in any such manner shall, within 3 months from the date of the publication of the above-mentioned Executive Instrument, submit writing to the Chief Lands Officer Cantonments, P. O. Box 558, Accra.

- (a) particulars of his claim or interest in the land;
- (b) the manner in which his claim or interest has been affected by the Instrument;
- (c) the extent of any damage done;
- (d) the amount of compensation claimed and the basis for the calculation of the compensation.

By Command of the Supreme Military Council.

GENERAL I.K. ACHEAMPONG
CHAIRMAN OF THE SUPREME MILITARY COUNCIL.

CONDITIONS FOR THE DEVELOPMENT AND MAINTENANCE OF
SMALLHOLDERS PLOTS

A. DEVELOPMENT - 3 Ha. Phase I

- (i) Underbrushing starts in November/December after plot allocation in October or November preceding the year of planting.
- (ii) Heaping and Burning should be completed by the 31st March of the year of planting.
- (iii) Smallholders who DO NOT complete HEAPING and BURNING by the end of March of the year of planting should have their plots re-allocated and reimbursed with the cost of operations up to the stage of development. The cost of operations shall be computed according to existing GCPD and Smallholders rate.
- (iii) All Smallholders should finish planting palms and pueraria by 30th July of the year of planting.

Smallholders who DO NOT finish planting palms/pueraria by the stipulated period would be allowed to develop the 4 Ha. PHASE II only on the recommendation of authorised GCPD staff. Smallholders who are NOT RECOMMENDED to develop the 4 Ha. would be required to maintain the 3 Ha. and the 4 Ha. re-allocated to another Smallholder.

- (iv) No cassava should be planted in the plots.
- (v) No plantain should be planted in the plots.
- (vi) Pueraria planting in the plots is important and COMPULSORY.

GCPD agents and employees would be empowered to remove cassava and plantain stands from the plots of defaulters, and defaulters would be consequently ejected from the land or not allowed to develop the Phase II (4 Ha.) depending on the circumstances.

B. MAINTENANCE OF PLOTS

(i) WEEDING

- (a) Interrow Weeding - 3 times yearly. Compulsory for all Smallholders - every 4 months.
- (b) Circle Weeding - 3 times yearly. Obligatory for all Smallholders - every 4 months.

(ii) FERTILIZER APPLICATION

Sulphate of Ammonia, Muriate of Potash and other fertilizers as recommended by GCPD employees or agents should be strictly followed - Every Smallholder is obliged to apply fertilizers.

/2...

(iii) RELATION

This is a necessary operation which needs to be followed monthly by holders whose plots are more than 16 months.

(iv) PESTS AND DISEASES

Pests and diseases when detected should be reported as soon as possible to the employees or agents of GCPD responsible for Smallholders/Out-growers Scheme for control.

(v) DRAINS CONSTRUCTION

Drains must be constructed and frequently maintained in plots which are liable to floods and water-logging during the rainy season. If this is not done, then GCPD shall construct the drains and charge the cost to the Smallholder.

C. PHASE II - DEVELOPMENT

- (i) Development of the 4 Ha. should be by recommendation by GCPD depending on the previous performance of the Smallholder. Thus development of 4 Ha. is NOT AUTOMATIC.
- (ii) Thus, Smallholders who fail to maintain the 3 Ha. to a satisfactory standard and did receive 3 (three) previous warnings from the Plantation Manager would not be recommended to continue the development of the 4 Ha. for the Phase II.
- (iii) Smallholders who have been recommended to develop the 4 Ha. but do not complete weeding and burning by the 30th April of the second year of planting will have his/her plot re-allocated.
- (iv) Planting of palms should be finished by the 30th July of the planting year.
- (v) No cassava should be planted.
- (vi) No plantain should be encouraged.
- (vii) Pueraria planting is compulsory.

D. MAINTENANCE OF PLOTS

(i) WEEDING

- (a) Interrow Weeding - 3 times yearly. Compulsory for all Smallholders - Every 4 months.
- (b) Circle Weeding - 3 times yearly. Obligatory for Smallholders - Every 4 months.

(ii) ABLATION

This is a necessary operation which needs to be followed monthly by holders whose plots are more than 16 months.

/3...

(iii) PESTS AND DISEASES

Pests and diseases when detected should be reported as soon as possible to the employees or agents of GOPD responsible for the Smallholders/Outgrowers Scheme for control.

(iv) DRAIN CONSTRUCTION

Drains must be constructed and frequently maintained in plots which are liable to floods and water-logging during the rainy season. If this is not done, then GOPD shall construct the drains and charge the cost to the Smallholder.

CHAPTER V

CONTRACT POULTRY FARMING IN SENEGAL

by

Martin H. Billings

CONTRACT POULTRY FARMING IN SENEGAL

I. Summary and Findings

Producers and buyers of commercial poultry products make extensive use of marketing contracts in present day Senegal. Contracts are usually oral rather than written and have little or no effect on choice of technology, supply of inputs, or quality of product. The agreements tend to accept the market prices current at the time of the transfer of goods. The principal purpose served by contracts is to give producers of poultry products the right of first refusal with respect to a price offering and buyers the opportunity to make an offer to a known supplier.

Contract relationships may be divided into three groups. (1) Contracts between a few large producers and institutions (hotels, large restaurants, hospitals, schools, and ship suppliers). They tend to be the most durable contracts, having already persisted for several years, and are likely to include some written agreement regarding an annually renegotiated price, and some quality specifications. (2) Oral agreements between producers and wholesalers, restaurants and even individuals. These are commonplace, and may also be longstanding informal arrangements. Price is almost always the prevailing market price. (3) All other contracts, which might best be described as simple business arrangements. A good example is an agreement to deliver a large quantity of live birds at a particular date for the going price. In all of the above cases the burden of delivery is upon the seller.

Although Senegal apparently satisfies many of the conditions for a more advanced level of contract farming (CF), there seems to be only limited need for CF at the present time. The market and production areas are identical and small, and transaction costs fairly low. While the market is relatively stable with respect to demand, it is indiscriminating as regards quality. Contract farming will not proliferate until the final market for poultry products grows. This growth must await (1) further economic improvement, (2) a change in consumption habits especially with respect to eggs, and (3) the possible development of an export market. The conditions that inhibit the growth of contract farming seem stable, and it is unlikely that its role will change significantly at any time in the foreseeable future.

II. Purpose of the Study

A. Justification and objective

The inquiry into contract farming as it is practiced among poultry farmers in Senegal is part of a wider AID-financed study into contract farming in sub-Saharan Africa. Poultry was selected in Senegal because the country is known to possess (by African standards) a large commercial sector and because it contains a well-established poultry industry. Poultry is one of the first agro-industries developed on a large scale by the private sector in most developing countries. There are several reasons for this. First, the capital investment required is typically within reach of the local investor: a few thousand US dollars will establish a basic flock of 500 layers or broilers housed in an acceptable lodging and provide the feed required to rear to the point of sale.¹ Second, many people have the illusion that poultry technology is simple. Poultry-raising is, in fact, a high risk activity since, in addition to having a good grasp of the technology, the successful operator also must be an accomplished manager and businessman.

Because the industry appears simple and entry costs are relatively low, amateur poultrymen often flood the market at the outset, driving down prices. A number of years may pass before the amateurs are discouraged, leaving only a core of experienced producers. In the meantime, the ability to secure reliable market outlets amidst the flood of undifferentiated products becomes vital to survival. Intense market competition marks the early history of all poultry industries, although the inherent economies of scale of the business often encourage the ultimate emergence of a few very efficient producers. This struggle has only recently begun in present-day Senegal, where there are an estimated 300 poultry operations (down somewhat from 1983, but with new recruits continuing to enter). Competition for contracts is correspondingly intense.

Whether the future industry is to be dominated by a half-dozen producers or several score hinges in large measure on the success with which farmers find contracts. This presents a number of fundamental questions. Who contracts? Is contract success important to the future structure of the industry, and how will contracting affect its growth? To what extent is the use of contracts a function of technology? What is the potential for vertical integration in Senegalese poultry-raising? What are the equity implications?

¹The broiler producer must wait 8-10 weeks and the egg producer up to 50 weeks to break even.

The identity of the successful operation is important and raises several additional queries. Will it be native Senegalese, or settlers (Lebanese), or a combination of both (and if so in what proportions)? Do the successful operators work at it full-time or part-time? What is the role played by retirees? What is the source of investment capital, and is there a need for additional sources of capital? Where do producers learn their skills? Is contract success affected by skills learned on the job, learned elsewhere, or intuitive to the person? To what extent does success depend on access to publicly supplied training? Contracts may affect the location of producers, the distribution of dependent employment, the need for borrowed investment, and finally the direction of future public policies.

The paper will examine whether the typical conditions that promote contract farming are in fact operative in Senegal. These include (a) novelty or complexity of poultry husbandry from the point of view of producers, who may require contract-supplied technical assistance; (b) whether the technology includes strong propensities toward economies of scale (which attract and promote contract linkages); (c) whether the technology requires costly or highly specialized inputs (likely to be high in import content and thus perhaps requiring the firm to attract external support); and (d) the perishability of the product--meat and eggs--which affects the urgency felt by producers to sell and buyers to store. Contract farming in the commercial poultry sector and its outlook will be examined, summarized, and explained in this context.

B. Methodology and sources

There is at present little published material on the Senegalese poultry industry. Apart from the documentation for one donor project (AID 1974-78), which could not be found during the visit, no public document seems to exist prior to 1980, when the Government of Senegal was first considering a follow-up project, and feasibility studies were undertaken.² Official statistics are only marginally better. Available statistics only include day-old-chick imports, which are not a reliable barometer of the total level of activity but render an exaggerated picture, because mortality reduces the net flock at least 10 percent. Further, they are not a reliable indicator of the relative size

² See Appendix D, Sources. Almost all the underlying technical background that appears in the report derives from Etude de factibilité sur le développement de l'aviculture au Sénégal, 1980. In fact, the later official documents noted in the the appendix depend in equal measure upon this report.

of the layer and broiler operations.³ A poultry co-op--AVICAP--exists; it has records of membership and locations of farms. The millers have annual feed production figures, but beyond this very little secondary data are available.

The information used in this paper was secured during a four-week visit to Senegal, in July-August 1986. The principal investigator was assisted by one Senegalese agricultural economist, Ibrahima N'diaye. In addition to the government bureaus associated with animal husbandry and statistics, the chamber of commerce, the president of AVICAP, a leading miller, hotels, restaurants, stores, and the largest ship chandlery were visited. Fifteen farmers were surveyed as well.⁴

III. A Contemporary View of the Sector

A. From 1960 to 1980

At the time of its independence, in 1960, Senegal satisfied almost all of its demand for poultry products with imported eggs and meat.⁵ After independence the government began to encourage the growth of an indigenous industry as one part of its overall goal of increasing national self-sufficiency. A small number of producers gradually came into being; it included both Lebanese (permanent residents) and wealthy Senegalese.⁶

³All of the imported chicks are sexed, and most are white leghorn. We are led to believe that both specializations--layers and broilers--use the same stock, a belief fortified by actual visits to farms. The use of an egg-specialist bird by broiler operators seems widespread and is unexplained. It is an important inefficiency.

⁴A list of farmers likely to have contracts was prepared from the membership list of the farmers' co-op, AVICAP. The co-op list provided only the address of the poultry farm. A questionnaire (see appendix E) was used in the actual interviews.

⁵A distinction must be made at the outset between poultry grown under commercial conditions, which is to say confinement, and traditional free-ranging bush fowl. Virtually all African poultry needs were, and still largely are, satisfied from this latter source. The commercial market has always been essentially urban, and consequently a European-Lebanese dominated one.

⁶Even a small poultryman, who has invested upwards of a thousand dollars in a 500-bird unit, is very well-off by local standards.

Domestic production slowly increased. Perhaps the best measure of growth can be found in the annual imports of day-old chicks--an input which remains entirely foreign in origin--for both egg and broiler production. In 1960 no day-old chicks were imported; by 1976 imports were 420,000. In the meantime, events in the early 1970s gave the government renewed interest in the sector.

Drought became a persistent problem, affecting the whole supply of meat in Senegal in the 1970s. Poultry came to be seen as an appealing (and relatively simple) alternative protein source, largely independent of rainfall and not needing substantial quantities of water and feed. The government took advantage of the abundant external resources that became available under the Sahel program to upgrade its ability to support poultry.

The Centre National d'Aviculture had been established at M'bao (25 miles north of Dakar) in 1962. A decade later the center became the focus of a USAID-supported project to promote poultry production. This four-year project was directed mainly at upgrading the quality of poultry management, which hitherto had been essentially self-taught. A network of ten regional training centers was set up, centered on M'bao, which gave courses directly to poultrymen and was supplemented by a cadre of extension agents. In addition, a small hatchery was established at M'bao (this is currently defunct, as vital parts are now unavailable). Since the formal end of the project in 1978, the government of Senegal has been unable to provide the recurrent budget necessary to support the program and it has gradually run down. Today the whole extension-training network as regards poultry is essentially moribund. Nevertheless, a great deal of technical information was provided, and many poultrymen interviewed trace the beginning of their commitment to this program.

Although it is committed to aggressive intervention in other parts of the economy, directly affecting prices and marketing in many particular instances, the government has never interfered with the essentially free market in poultry. Input subsidies, for example, have not been granted. From 1960 to the present, the government has left input production and supply, the production and sale of meat and eggs, and even the supply of veterinary support and materials to the private sector. To promote domestic production, public policy shifted in 1980: a total ban was imposed on the import of poultry products. This action has produced the desired effect. Following the imposition of the ban, prices for both meat and eggs, which had been stable for some time, increased 40 percent within three years. During the same period, day-old chick imports rose 50 percent (from

1,100,000 to 1,700,000 annually? Since 1983 (the last full year for available data), imports have remained high and are reported to be gradually climbing. The industry today (1986) includes some 300 producers, the majority in broiler production, with the largest tending as many as 25,000 layers, or selling upwards of 1,000 broilers weekly.

Substantial levels of production notwithstanding, the industry has not yet become fully mature. Although input suppliers can benefit from investment codes that give tax concessions on both income and the import of supplies, little impact has been registered. No domestic hatchery capacity, for example, has developed. Neither has a public animal health service been established--unlike the case in some other African countries--capable of supplying mass vaccinations to poultry. The country is, however, self-sufficient in maize for chicken feed: in only two years in the past decade have millers had to import the needed maize. And only selective additives are imported to produce a variety of specialized feeds. The level of poultry husbandry is improving and is probably equal to any in sub-Saharan Africa.

Perhaps the most serious constraint to growth remains the limited extent of the consuming market, which is located almost entirely within the city of Dakar. Consumption tends to be concentrated among expatriates (including Lebanese) in the case of eggs, and includes better-off Senegalese with respect to meat. Consumption of poultry products is currently estimated to be approximately 360,000 dozen eggs and nearly 1,000 tons of meat annually. By African standards these products are expensive. Although Senegalese consumption studies are lacking, those pertaining to other cities in West Africa (in particular Freetown) suggest that poultry products (for native Africans) are superior goods, having high income and price elasticities. These elasticities are higher for eggs than for meat, a difference that explains in part the dominance of broiler production and the large consumption of meat (relative to eggs). It also is an indication of the potentially large impact on sectoral income of any event that affects the price for poultry products.

Commercial poultry is, therefore, in the difficult position of an industry whose relevant supply and demand functions are

7Among imported day-old chicks whose economic destinations were noted at the time, the proportions destined to become layers indicate that egg producers are in a shrinking minority: a third of the imports in 1980 were slated to become layers, while in 1984 the corresponding proportion was only a fifth. Annual imports for all day-old chicks, sexed, were: 1976, 420,000; 1977, 800,000; 1978, 880,000; 1979, 970,000; 1980, 1,100,000; 1981, 1,160,000; 1982, 1,100,000; and 1983, 1,700,000.

both elastic, but supply probably more so than demand. Because the domestic market is limited, it is comparatively easy for investors to enter or expand. The likelihood therefore exists of a widely fluctuating supply interacting with a relatively rigid demand. Prices can move more than proportionately in response to changes in supply, beckoning new and unwary investors while discouraging serious long-term growth in the industry. However, prices have not in fact fluctuated markedly in recent years, perhaps reflecting a decline in speculative entry; nevertheless, many small and marginal operations remain. Still, growth in the final market remains slow, and the major producers remain important, but reluctant to invest further.

The Fifth National Development Plan (1985-1990) calls for intensified poultry production, a doubling of the level of production by 1990. No direct actions affecting the sector appear to be included in the actual plan.

B. Development and role of cooperatives: AVICAP

The government initiated the first cooperatives directed at poultrymen. In 1981 several regional co-ops were set up, of which only one, AVICAP, is of any significance. It claims 60 percent of all poultrymen; they represent 80 percent of the national capacity. AVICAP was given the monopoly of importing day-old chicks into the country, although nonmembers may buy from the co-op.⁸ The co-op was originally intended to play an important role in the marketing of poultry products, and a network of 150 outlets was envisaged. Operations on this scale have remained chimerical; lack of capital has allowed the co-op to open no more than one kiosk in Dakar.

C. The trend toward concentration

Poultry is an industry that is usually marked by rapid concentration of production among a very few efficient producers, a process that has not yet begun in Senegal. At the time of writing there are an estimated 300 active producers, 80 percent of them concentrated in the arrondissement of Cape Vert, supplying the only important market, Dakar. This is up from 160 in 1980. They are about evenly divided between broiler and layer operations. Most operators were small: only 6 broiler operators produced upwards of 1,000 birds weekly, and only 20 egg producers had more than 5,000 layers. Their continued presence has a profound effect upon the maturation process. A small number of large firms function and profit, but the evidence suggests that the rate of return to investment in the sector is low. This is

⁸This monopoly has been relaxed in recent months.

due in part to the pattern of entry by small operators, who set up 500-bird units, and later sell them off, collectively serving to depress the market for all. An example of this can be cited from the early eighties, when the chef d'élevage, in an announcement made on public radio, stated that anyone could make 300 CFA per broiler. This is believed to have encouraged some 400 persons eventually to enter production, causing such a glut on the broiler market that many birds had to be dumped into the sea. The financial effect on normally profitable firms must have been ruinous.

D. Propensity toward vertical integration

Commercial poultry is an industry usually marked by a strong propensity toward vertical integration. The commonest pattern of integration is for feed producers to begin to take over poultry production. This process is encouraged when the industry is dispersed and the miller attempts economies in the distribution of a bulky, low-value product. In the case of Senegal, the economic geography is quite different: millers, poultrymen, and consumers are spatially concentrated in Cap Vert. Millers show no present interest in becoming poultrymen.

Poultrymen are beginning to internalize several activities within their own businesses, for example, slaughter and dressing of broilers, and distribution to dealers.

Kassak (located in St. Louis, 150 miles north of Dakar) is an excellent example. Large, well-established, and widely respected, the firm is able to trade poor location for efficient management and good service. Kassak supplies the well-known supermarket Score, with whom it has a written contract for 6,000 eggs and 100 dressed chickens weekly, at a negotiated price. The firm seems to be a large-scale example of typical well-run poultry firms: they negotiate for outlets, but the relationship seems to go no further.

Two more vigorous instances of vertical integration can be demonstrated. A major buyer of poultry products, Demel, is the largest ship chandlery in Dakar, supplying food (among other things) to ships. A major contract client is the Russian South Atlantic fishing fleet, which is based in Dakar. Demel has a contract to provide the fleet with all of its poultry needs. The contract provides that Demel supply a given number of frozen birds and eggs, but with little specification as regards quality. Demel would not divulge the volume of demand, but it is evidently sufficiently large that the firm set up its own poultry farm and processing plant.

A second example is the Lebanese agribusiness firm, Filfili. A long-established family in Senegal, Filfili has created a

modern irrigated farm on 700 hectares of former sand dunes, bought 15 years ago. The farm supports a prosperous multi-enterprise agribusiness (AGROCAP), which includes four supermarkets. Poultry is among the enterprises. In addition to eggs, chickens are reared, slaughtered, dressed--a portion are frozen--and sold through the system. Filfili mill and mix their own feed, and they are now importing their own chicks, thanks to a special concession from the government. The poultry operation is not expanding, however. Filfili feels the returns are insufficient, as the market is saturated much of the time.

E. Summary

The Senegalese commercial poultry industry appears to be well established. A core of profitable larger-scale operations exists; these firms effectively use modern husbandry techniques. Although good layer stock is used, broiler operators are seriously hindered by their continued use of ill-suited stock. While there is market that is sizable by African standards, it is one easily saturated with the commodity. Only gradual growth is foreseen. Little propensity can be detected at the present time for the sector to begin to integrate forward or backward. A common source of vertical integration, the feed industry, finds poultry the least remunerative line open to it. Similarly, large-scale poultrymen see little scope for further investment. There is little present evidence of concentration of production among a few producers. Market opportunities for individual firms can be elusive, thus many suppliers seek enduring links with their market outlets. It is to this dimension that we now turn.

IV. Contract Poultry Farming: Present Status

A. Contract farming, an overview

Senegalese poultrymen have been actively arranging contracts between themselves and buyers for a long period. It is probable that formalized arrangements between seller and buyer date back to the beginning of the industry, or as soon as the convenience of the practice became evident. Three examples of long-lived contracts illustrate this longevity.

One of the country's largest producers, Kassak, has maintained permanent oral contracts, supplemented with annual written ones,⁹ with two of Dakar's major hotels, Teranga and Novotel, for a decade. The contracts commit Kassak to supply the Teranga 1,080 eggs and 120 chickens weekly. Eggs are to be large in size and brown in color; chickens, cleaned, dressed, and

⁹In these, the following year's price is agreed.

chilled. Essentially the same contract is in effect with the Novotel, calling for 30-80 birds weekly and 700-2,000 eggs. A similar contract, which has been in effect between the Hotel Independence and M. Abdoulaye Sow since 1976, is oral and has committed him to supplying 300 eggs and 20 chickens weekly to the hotel. These long-term contracts are marked by annual price negotiations, which give the producer a price that typically is slightly lower than the current market price, the seller trading short-term price advantage for long-term market stability.

A number of larger producers have negotiated and sustained contracts with various institutions, including hotels, army, and schools, which appear to follow much the same terms as Sow has made with the Independence Hotel. Most appear to be oral. An additional example is provided by the Pasha restaurant, which has bought 20 chickens and 300 eggs every week for the past ten years, following the terms of what is described as a "loose" oral agreement with a former minister, M. Sidebe, which is updated annually.

A written contract is exceptional, and copies, where they exist, are difficult if not impossible to obtain. Poultrymen, however, are not hesitant to talk about their contracts, if only in general terms. In addition to being typically oral, other aspects stand out.

There are no recognized official standards in the trade. When quality is desired the guidelines are expressed loosely. Eggs must be "large," chickens "clean." Color, in the case of eggs, and weight are often specified.¹⁰ Candling is never done, and the market is indifferent to blood in the yolks.

No case has been found to suggest that conventional buyers, hotels, etc., involve themselves in any way in the production process. Inputs are not provided. Production requirements or guidelines are unheard of (with the exception that some hotels require producers to maintain clean facilities, verified by a note from the chef d'élevage). One exception is the case of the Marika poultry farm, operated by M. Lefevre, of CARITAS. His operation sells birds directly to individuals with whom he has written contracts to provide a weekly supply. Lefevre employs salesmen who function rather along the lines of an Amway agent, actively selling purchase agreements almost on a door-to-door basis (see appendix B for details). The volume of business is

¹⁰The color specification was reported with considerable consistency. Consumers, and therefore stores selling directly to consumers, seem to prefer white eggs. Hotels, or more to the point, cooks, specify brown eggs, arguing that the shell is stronger or that these are, for some unspecified reason, better for baking.

sufficient that Marika needs production in excess of its own, and to meet this need has arranged subcontracts with six poultrymen to function as out-growers. The company helped them get into production, provided credit and technical and hygiene advice, and agreed to buy their output.¹¹

B. Who contracts and why?

The poultry industry today is a buyers' market; sellers contest limited turf. In such circumstances, from the point of view of the seller, a contract makes sense. No one knows how many (or what proportion) of the committed poultry operations engage in contract marketing. The evidence suggests that many producers want to arrange contracts, indeed there may be more poultrymen in search of a partner than potential partners.

There are relatively few institutions--hotels, restaurants, and the like--relative to the number of eager producers, who must turn to public markets, small stores, or traders, or attempt to sell from the farm gate. These options are not mutually exclusive: some try all, some, or one. As noted above, one exceptionally enterprising firm, Marika, has taken contracts to the ultimate consumer.

M. Aboubacar N'gom, an important Senegalese farmer, argues that a direct oral contract with one or a few 'banis-banis' (wholesale traders) is best. He is a full-time poultryman with 4,000 layers, who has carefully cultivated his links to a few important wholesalers to the point where he is now their principal supplier. One advantage of this is that he can quickly arrange small loans from them against future deliveries. N'gom also finds the personal links a great help; when the market is down, he can count upon an outlet. These advantages notwithstanding, this sort of link was not favored by most producers as a first choice. What is desired is a firm contract with an institution. The principal reason given is 'security'.

C. The tendency toward opportunistic behavior

There is no particular tradition in Senegal regarding the sanctity of the contract, whether oral or written, and with the present value placed on money being high, contracts are likely to

¹¹ Lefevre sees himself as something of a philanthropist. Apart from being the only poultryman interviewed who not only insists upon written contracts but claims he is willing to go into court to enforce them (as a last resort), he also sees himself as having a duty to uplift where it is possible and profitable. Helping young poultrymen is one way.

be broken even at the cost of a longer-term relationship.¹² Among Senegalese, there exists a strong, and certainly widely reported, propensity to engage in opportunistic behavior, which includes breaking a contract whenever it appears in one's interest to do so. When both partners behave in this fashion, the value of the contract degenerates into little more than a right of first refusal.

It is apparently unheard of for a contract to include a clause providing for unilateral termination contingencies, or compensation. The concept of contract enforcement is alien. Recourse to legal action following violation of contract is rare. Whether unseen actions take place, using traditional media, is unknown and certainly not talked about.¹³ With this history in mind, and since most contracts are not binding, one wonders why buyers or sellers resort to contracts at all.

It appears, however, that poultrymen who are full-time, who have a great deal depending upon their investment, and who have been in the business long enough to know that poor years follow good years, take their contracts very seriously. And, reputation notwithstanding, no farmer or buyer was found who admitted personally to having broken a contract, although all felt it to be commonplace.

The market for poultry products today (1986) is a buyers' market. Under such circumstances it is in the sellers' interest to honor scrupulously their agreements. Producers eagerly seek long-term arrangements, even discounted below current price. But will they live up to these agreements when (and if) a sellers' market appears?

It is possible that only producers who satisfy certain criteria are likely to be in a position to engage in contract

¹²This may be one reason why Lebanese poultrymen are more prone to use the written document: it fits within their tradition.

¹³In eastern Nigeria such a violation traditionally could have serious repercussions. On some occasions the aggrieved party was known to call supernatural forces into play through witchcraft. In other societies more direct social action has been used. No recourse to either of these options, or to any others, was detected in Senegal. Perhaps the likelihood of default is discounted at the outset. Lefevre is unique among farmers interviewed in his willingness to admit and tackle the contract problem. But his background is untypical. He is half French and had a French wife. Although a Senegalese national, he worked abroad for years in France and Martinique.

production. These include (a) access to a telephone, (b) access to a small truck, and (c) having sufficient funds to be able to wait months for repayment. In addition, poultrymen have to be fairly close to the Dakar market to remain competitive (obviously the town of Kassak is a major exception).

Farmers themselves generally confirm these criteria. One has to be a person of means to support a contract trade. A typical concern, reflected by almost every farmer, with or without contracts, is that of having to wait for payment.¹⁴ The probability of late payment seems to be a major consideration in planning marketing options. Often the buyer will not pay on delivery but at a future date, which may be six months. Many cannot afford to wait and still service current accounts. Thus many producers who are potential partners have excellent grounds for suspecting that there is less to gain in contracts than meets the eye.

In practice, the criteria make the contracting farmer a member of a very exclusive club, granting that the typical poultryman is a very untypical Senegalese to begin with. Only exceptionally will a poultryman be the owner of a vehicle or have access to a phone. Tardy payment for supply makes the ability to wait perhaps the most critical and discriminating criterion. In sum, only the larger poultryman is likely able to engage in contract supply. Who then can afford to take contracts?

D. The modal contract poultry farmer

The modal (typical) contract farmer is a male Senegalese, in his mid-forties, with a broiler operation in five to eight poultry houses on one hectare of land, who has an oral contract with one or more outlets (possibly an institution) and has access to a small truck and phone. He sells at least 1,000 broilers every two weeks. It is likely that his primary work is with the government. He does not live at the farm site. The farm is less than 50 miles from Dakar and in all likelihood much closer. It is less likely that he has a specialized layer operation--a 20 to 30 percent chance--but if so, he has 5,000 layers. It is

¹⁴Although the largest producers typically have--and jealously nourish--contracts, at least one exception is M. Hajjar, a Lebanese who operates a 4,000-broiler farm on the main road east of Rufisque. M. Hajjar says he does not want the bother of having to honor long-term arrangements (he is 65) and is content with a well-established clientele of individuals with whom he has established informal understandings over the years. He delivers processed birds to his clients or sells from his farm.

unlikely that the farm has both. The farmer has learned his trade either through a government training center or on his own. He keeps records, but may not know how to make best use of them.

There is a numerically small but important subgroup of poultrymen, often of Lebanese origin but usually Senegalese citizens of long standing. Whether or not they are full-time poultrymen, they are large-scale businessmen, good managers, and typically resident at their farm. These farms are most often multi-enterprise entities and poultry is only one of several important lines. With the somewhat exceptional case of the Hajjar farm, these farms have regular commercial links, based on a written contract, probably with other Lebanese-owned firms. Social pressure alone would argue for a high degree of scrupulous attention to contract terms.

E. The role of contract intermediaries - AVICAP.

Poultrymen who do not choose to, or cannot, engage in contract sales may use the marketing capacity of the producers co-op, AVICAP, as a sales vehicle. Almost all large producers are members. Until 1986 a strong membership incentive had been AVICAP's monopoly on chick imports: although nonmembers could order through the co-op, members felt at least they received priority attention.

In theory at least, AVICAP is able to provide technical assistance and marketing assistance, in addition to chicks. The reality is somewhat different. AVICAP has had a difficult time securing all the chicks ordered by its members. It has practically no technical assistance to offer. Moreover, its chronic undercapitalization has precluded the establishment of a network of outlets. At present only one retail outlet managed by AVICAP functions, but it does take both eggs and birds.

Nevertheless, some poultrymen--an estimated 20 percent of the membership--use the co-op as their primary outlet. The cooperative reports that it is the middle-scale producer who tends to use its service. Mme Arame Diop (1,000 broilers), one of the few female operators, prefers the co-op because she feels more secure with it.¹⁵ Payment is relatively quick, and in principle should be, at least in part, on delivery to the co-op. The co-op charges a fee for its service: 100 CFA per tray of 30 eggs (about 10 percent of the market value) and 50 CFA/kg for broilers.

¹⁵ However, she supplements this with arrangements with one or more traders.

F. Summary

The Senegalese market for poultry products is typically saturated with a large volume of undifferentiated eggs and broilers that supply a slowly growing and undemanding body of consumers. This sort of market can function effectively so long as (i) demand remains relatively homogeneous, (ii) production cycles are short (and the potential rate of response, high), (iii) there is little concern with the precise timing of deliveries, and (iv) the market remains stable and well understood by all participants. Buyers in such circumstances find that the spot market is able to satisfy their needs and there is no reason for them to tempt producers with offers of credit, inputs, technical assistance, or whatever. Buyers also are under no pressure to attempt contract relationships that involve much more than the promise of first option. In consequence, it is the exceptional producer who is able to build long-term linkages with buyers; the rest scramble for markets, which can be difficult to find and service.

To be successful, producers must be able to compete on grounds of service, respond quickly to demands, deliver the goods, and then wait for payment. The realities of the situation give great advantage to poultrymen who have access to means of communication and transportation and who can wait for payment. This group is almost certainly a minority of the AVICAP membership--which includes all of the potential contract farms--and likely no more than 100 ca. hope to compete. Of this group, fewer than 50 are in the above 10,000 layer or 5,000 broiler bi-weekly class. The others must either supply very local markets or take their chances on the spot market.

V. Contracts: Terms and Provisions

With one exception,¹⁶ none of the persons interviewed for the study was prepared to produce a copy of his/her contract, completed or blank, which implied that the details were too private. Poultrymen and buyers were ready to talk about their contracts' provisions, however, at least in general terms. In the event, what was found conformed in large measure to what had been reported as common practice. Contracts between poultrymen and buyers appear to be very similar and reflect one underlying truth: the advantage in the trade lies on the side of the buyer. Unless a buyer has a particular need, such as an institution that must count on a reliable inflow of supply, it is in his/her interest to keep the contractual relationships loose. Contracts

¹⁶ The contract drawn up between Lefevre and his customers, which is included in annex F and discussed in detail in Annex B.

faithfully reflect the comparative strength of the actors; in this case, the relative weakness of the producer of poultry products is clearly revealed.

A. Oral versus written

It is likely that in excess of 90 percent of all contracts agreed to by Senegalese poultrymen and their market contacts are oral, at least at some stage in their relationship. Cases were found, such as Kassak and Sow, where the original contract had been oral and subsequently was supplemented by annual written contracts in which the current agreed price was spelled out.

It is believed, if not demonstrated, that Lebanese are more prone to insisting on basic written agreements, but at least one exception was found (that of Hajjar, noted above).

B. Duration

Information is rather vague on this point. It seems that written contracts may cover up to a year or across a perceived price cycle. Oral contracts appear to be indefinite arrangements whereby the buyer agrees to give first option to the seller at a price to be agreed at the time of exchange. Only the larger, and possibly more sophisticated, producers follow the two-tiered plan of Kassak: a long-term oral agreement, possibly open-ended, supplemented by annual renegotiation.

C. Terms

The typical contract, for either eggs or meat, includes subjective quality guidelines, and specifies that particular quantities be delivered at a certain time by the producer; it may or may not include a price formula. With the exception of health, no contract arrangement has been found where the buyer specifies conditions of production or provides inputs, credit, or technical assistance.¹⁷

D. Price agreement

The typical contract states that the price will be that prevailing at the time of delivery of the product, in other

¹⁷The unusual case where a producer (Lefevre) provided technical help to subcontractors (which included production guidelines) is so limited (6 small producers out of 300) as to be statistically insignificant.

words, the spot price. Only the exceptional contract specifies a particular price (or price formula) for a given period of time. Participants were not willing to explain the details of the formula used in their particular case. Arrangements appear, however, to be based on a projection of the average performance of the recent past, and this calculation typically yielded a price slightly below the spot price at time of delivery.

E. Allocation of risk

As presently constituted, contracts in the poultry sector shift little or no burden from producers. In the context of the normal buyers' market, wherein producers compete for a limited number of reliable outlets, buyers are under little compulsion to assume any risk. The cost of market search is borne entirely by the producer. Even where an institution such as a hotel was prepared to offer a year-long price, it retained the option to buy substantial quantities outside of the contract. An exclusive contract appears to be very exceptional.

Contracts do not have any provision that would share flock losses with buyers. Farmers, therefore, cannot shift production risk forward onto buyers by means of contracts even when the flock is entirely destined for a particular buyer.

Contingency clauses seem to be unknown, and contracts do not provide any compensation for early unilateral termination of a contract.

F. Summary

Senegalese poultry farmers are widely familiar with the use of contracts even when they do not contract themselves. Indeed, certain groups appear to make extensive use of contracts. The typical contract involves the delivery of a shipment of live birds or trays of eggs by the seller, subject to subjective standards that hinge on acceptance by the buyer, at the spot-market price.

Contracts are limited almost solely to the terms of exchange and do not at present serve to reallocate risk, promote integration, or significantly influence the quality of product or mode of production.

VI. Contracts: Effects - Benefits and Costs

Contract farming in Senegal, however widespread as a practice, appears to operate in a more limited range than might

have been expected in a country that is in many ways highly commercialized. Senegal has a rich history of commercial exchange; trading is an accepted and widely practiced activity. Commercial production and sale for profit has been known in western Senegal for at least a century. In the city of Dakar, Senegal possesses one of the most developed urban centers in Africa, and a large consumer population. Yet, an examination of the role of contracts in commercial poultry strongly suggests that the mechanism has had little effect beyond regularizing the marketing of a hundred or so well-located and better-off producers. This limitation is thrown into relief when considered in various particulars.

A. Effect on product quality

Contracts do not at the present time appear to have any appreciable effect upon quality. Grading of eggs, for example, consists of little more than supplying the hotel trade with above-average size brown eggs. A shopkeeper will ask for white eggs of "at least average" size. Concerns of North American consumers, in particular blood in the yolk, are not reflected in Senegal. Broilers must simply be clean and nicely dressed.

The expatriate trade apart, at present little discrimination is expressed, through prices, as to quality in poultry. It is probably fair to say that the African market looks upon chicken as simply a relatively cheap meat commonly used in stew. In such circumstances there is limited scope for the development of a discriminating market that can express itself through contract requirements on producers.

At the present time the Senegalese market is not so broad that special needs must be met. A beginning has been made where a market exists for frozen birds (for the trawler fleet), which Demel has met through full vertical integration. The standards set forth by hotels are essentially subjective--large, clean, nicely packaged. In such circumstances the essential technology to produce is available to all, so that even the newest, least experienced producer can put out an acceptable offering.

B. Effect on production decisions

There seems to be little interest on the part of buyers to use contracts to influence production methods, with the exception of the Marika operation. No other instance was reported where a buyer attempted to influence the method of production or the type or quantity of an input used. Inasmuch as levels of input purchased are a function of scale of operation, contracts can be said to have an indirect effect upon costs of production. The phasing of costs and the ability to plan long term are important

arguments advanced in favor of the contract. Contracts may, moreover, affect scale of production and thus have an impact on economies of scale and profit.

C. Effect on input supply and suppliers

There is no way of estimating whether contracts have affected the total volume of poultry products supplied in Senegal. It is likely that the assuredness of a market provided by a contract has influenced the decision of some individuals to produce and their choice of quantity (but not the actual technology selected), which in turn has affected the magnitude and timing of input purchases.

Perhaps the most significant commentary in this regard concerns what has not happened: although annual imports of poultry stock may now approach 2,000,000 day-old chicks, no domestic hatchery has grown up. Were there an indigenous Senegalese hatchery sensitive to particular needs of the poultrymen--a better broiler stock for example--it is possible that contracts might reinforce farmers' natural desires to increase incomes through the use of specialized stock.

The effect of the industry on maize producers, almost all concentrated in the upper Casamance, appears to be minimal. No contracts have been let out by the millers, who can buy all of their needs (1,000 tons) in the market.

D. Effect on distribution of risk

Contracts cannot be said to have had any appreciable effect on the distribution of risk or its reduction. The concept of allocation of risk between contract partners proportionate to individual exposure resulting from their agreement remains unknown. Even written contracts between those most involved with formal contracting modes, hotels and the Lebanese, do not appear to include any provision for compensation in the event of a contract's being broken by either partner. Neither are contingency features included. Simply put, the farmer bears the full burden.

Risk can, however, be looked at another way, namely, with respect to the effect of a contract on the variation in income as a function of a fixed price. A fixed price can be risky to the producer in an upward-moving market: if there is an increase in the demand for eggs, the market price will rise if supply is not perfectly elastic. But producers who have contracts specifying a fixed price will lose out on this increase (as they would if the market price rose because a decrease in supply raised the price). Of course the converse is also true: the fixed-price contractor

is better off if a decline in the demand for, or an increase in the supply of, eggs causes the market price to fall; his contract would insulate him from the risk of a decrease in income. The fact that there are comparatively few fixed-price contracts suggests that this risk has been little affected one way or the other by contracts.

E. Effect on new investment decisions

The same argument applies as in the case of input supply. The presence of a long-term contract may encourage the holder to increase his scale of operation if the projected volume of sales justifies it. And it is possible, but not demonstrated, that the likelihood of a contract may encourage a person to enter the industry.

F. Effect on producers of differing ethnicity

The bulk of producers are Senegalese (and apparently Wolof), although many important producers are Lebanese. The latter group certainly is more likely to seek out formalized contracts. But Senegalese, too, have sought contracts, even though these are likely to be less formal and binding. A number of Senegalese are being introduced into modern commercial relationships and production by poultry, and possibly by the obvious advantage of having established markets.

G. Spatial effects

The presence of the Dakar market shapes the economic geography of commercial poultry in Senegal. The spatial concentration of millers, growers, distributors, and consumers may discourage the trend towards vertical integration. Few producers located beyond Thies can compete with those closer to the city; an exception is Kassak of St. Louis, which combines large scale with what is apparently very good management. It is unlikely that the market access made possible by a contract could of itself offset basic advantages of location.

H. Effect on income

Producers argue that contracts have favorable effects on market access and production planning. They rarely argue that prices received are higher than would be otherwise received on the spot market, but they appear to believe that a stable income is better than a higher but more risky--that is, more volatile--one.

For those producers who have obtained and kept long-term contracts that include a formula to compute the price, regardless of short-term shifts, it is possible that long-term average income is greater. Producers consistently reported a willingness to trade off income for some security, and it is arguable that a producer who has a contract that results in variable income but reliable access may be better off in the long run.

Income is also the product of job creation. Poultry production does not demand large quantities of labor, however, a characteristic that constitutes an important source of the sector's remarkable tendency toward economies of scale. Furthermore, the labor that is required can be unskilled if properly supervised by the owner.

Nothing can be said of the impact of contracts on new jobs except to the extent that they encourage new entry and larger operations. In the latter case, the impact has been minimal. Only when the poultry enterprise adds slaughter as an activity will actual demand for labor rise.

I. Summary - net benefits and costs

It seems fair to say that contract farming, restricted as it is to the marketing of poultry products, has had very limited effect on any dimension of the sector or the wider economy. Perhaps it is premature to expect much impact, given the sector's recent creation: indeed, it has been only six years since government granted the industry full scope to grow by the imposition of the import ban.

Thus, a list of benefits and costs presents meager reading. The sector exhibits no visible cost impact deriving from the use of contracts to date. The negative side, therefore, may be close to zero. What of benefits? It can perhaps be argued that contracts are introducing some additional, and badly needed, modern dimensions to producers just entering the commercial sector, and that some marketing uncertainty may have been reduced.

VII. Conclusions

If contract farming is taken to mean production carried out according to an agreement between producer and buyer that places conditions on the production and marketing of the commodity, then contract farming has not developed very far in the Senegalese poultry industry. Neither is it likely to grow much in the foreseeable future: the factors responsible for the present situation seem stable. No important degree of buyers' influence

on production can be found. Additionally, conditions on marketing imposed by contracts are typically so unrestrictive as to represent only a short step beyond simple spot marketing. Furthermore, producer behavior is affected so little by contract terms, and the degree of reported opportunistic behavior is so great, that the practical effect of the contract is very limited.

Data are lacking to provide a definitive answer as to why contracting has not evolved more in Senegal, but some possible explanations can be advanced. Certain economic and other conditions promote the use of contracts, but it must be underscored that there is little economic incentive in the Senegalese economy to produce poultry products under contract as long as there remain no serious limitation on market information, no lack of supply of inputs, and no more demanding final market. Finally, the economic geography of the matter--the close proximity of all actors in the Cap Vert area--acts to discourage the growth of contract farming.

When a technology is new or complex, producers are likely to seek contracts with buyers who are in a position to offer technical assistance, usually through private extension agents. Are there buyers or suppliers in Senegal capable of, and interested in, promoting this sort of contract relationship? On the demand side the answer is clear: few buyers of eggs and chickens are able to offer technical assistance. Lefevre does, but on a very modest scale. It can be argued that Demel and Filfili might be able to engage in this sort of contract, but they have chosen to integrate vertically rather than depend on contract links. On the supply side, millers, elsewhere frequent leaders in vertical integration, are completely disinterested. Poultry simply does not pay well enough to make the effort.

When a technology displays powerful tendencies toward economies of scale, with the accompanying flood of output, there is a strong propensity for producers to seek reliable contract links. Poultry is certainly an industry with strong, and usually early, tendencies to economies of scale. Good managers are able to spread basic inputs--labor, housing, management skill, other capital goods--over a very large number of birds without having materially to increase their basic investment. Such a level of production sends a substantial volume of product onto the market. Unless the market is very much larger than is the case in Senegal, the large-scale producers must seek reliable market outlets. Firm, long-term contracts are the only feasible choice for these producers, and they have indeed taken the lead in establishing outlets that are as reliable as possible under the circumstances.

When a technology demands large quantities of costly or highly specialized inputs, producers may seek these inputs on a reliable basis, often through contracts linked with delivery of

the product. Poultry has no less than three such inputs-- veterinary support, feed, and chicks. Once again, no Senegalese buyer of poultry products is so needy of the product(s) as to have to supply inputs to satisfy its requirements; the only known exception is Marika's establishment of a small out-grower system. Similarly, millers do not find the sector sufficiently profitable to attempt forward links with producers.

Poultry products are perishable. Broiler producers cope by delivering live birds, but the situation is more complicated in the case of eggs. In periods of large deliveries of eggs and low prices, the dealers' demand for eggs is added to consumer demand; this keeps prices from falling as low as they would in the absence of purchases for storage. Dealers buy eggs on contract when they believe prices will rise in the future. Given the problems of shelf life, inventory is often better managed through contract, storage in effect being accomplished through the price mechanism. This is the pattern now found in Senegal for eggs.

If the number of producers dwindles to a handful, possibly accompanied by substantial degree of vertical integration, it will be in the long-term interest of both buyers and sellers to work out more comprehensive contracts. Alternatively, when the market grows to a point where there is a return to investments in product quality, or particular needs must be satisfied, it will also be in the buyers' interest to demand more binding contracts.

The fundamental problem that seems to underly the lack of development in the use of contracts beyond that of simply securing supplies is the limitation of the final market--both in absolute terms and in terms of the demand for quality. Senegalese poultrymen have already reached high levels of production. Producers can now swamp the market. Rates of return to investment may have fallen below opportunity cost. Still, the appearance of easy money draws investors, who set up small, short-lived operations, which effectively depress the market for the others. The ease of production leads to an average overproduction sufficient to provide little incentive for buyers to attempt more ambitious contract arrangements.

The final market is not likely to grow much beyond that dictated by urban growth and income. Incomes have been depressed in Senegal for years. Indeed, they have been falling in real terms since the late drought years. Income-sensitive commodities like poultry products are the first to feel the pinch. African consumers make little use of eggs, which are consumed almost entirely by expatriates or Lebanese. The egg market is therefore closely linked to the prosperity of the tourist industry and the presence of foreign residents.

The market for broilers is directly affected by the parallel supply of African bush chickens. In addition, there are close

substitutes, such as fish. The African market is not discriminating in terms of quality. Only the comparatively small elite sector, which demands frozen chicken parts or dressed and chilled broilers, places any quality demands on producers, and these are easily satisfied. There seem to be few grounds, therefore, for the growth of contract farming beyond its present state in Senegal. Such growth is unlikely until the market is both larger and more sophisticated in its demand for quality.

The government of Senegal has followed a policy of benign neglect with respect to poultry as compared to other food production sectors. Inasmuch as consumption is in large measure dependent on income and poultry products are superior goods, governmental intervention is limited to the promotion of these products under the rubric of nutrition and health. Changing public attitudes toward egg consumption, for example (see appendix A, 3.), could greatly increase African consumption of the product, especially among the young.

Significant development of contract farming will not occur until a larger and more discriminating final market comes into being. This can come into existence as the consequence (jointly or separately) of (1) economic growth, (2) a change in consumption habits and, (3) the creation of an export market. Inasmuch as none of these conditions is likely to happen at any time soon, contract farming in the poultry industry cannot be expected to expand in the near future.

APPENDIXES

Appendix A. The Quality of Husbandry

1. The underlying biology and the importance of stock

Animal husbandry involves the economic management of living creatures, which are supported up to the point in their lives when the cost of additional support exceeds the additional value of their product, which, in the case of poultry, will be meat or eggs. The birds convert feed to these products at an efficiency determined by their species and age. Profitable commercial poultry depends on the use of specialized stock. For broiler stock, the farmer can count on a breed that matures to market quality in as little as 8 to 9 weeks, producing 1 to 1.5 kg of meat, and which may require 2.5 kg of feed. If, for some reason, the farmer uses a nonspecialist bird, such as a Rhode Island Red, maturity may come as late as 12 weeks and require 3 or more kg of feed to produce 1 kg of meat.

In the case of layers, with egg specialist stock (such as white leghorn) egg production begins after 20 weeks of age, rises to a maximum rate of lay at 30 weeks, and then declines gradually to the 60th week, when farmers typically dispose of the flock.¹⁸ Feed-egg conversion mirrors the rate of lay, becoming at first more efficient, then, after the 30th week, slowly declining to a point--about the 60th week--at which the cost in feed per dozen eggs becomes excessive.

Senegalese broiler farmers do not typically appear to be using broiler stock. Rather, their operations seem largely dependent on French leghorn stock. This implies that they are using more feed than necessary per kg of meat produced, and likely having to hold the birds a week or two longer than a specialist breed would require.

The major cost in poultry production is feed, which represents 70 percent, and in some cases more, of the total cost of production. Several Senegalese farmers reported feed to be 80 percent of their total production costs. The use of improper stock could be an important source of this extra cost.

¹⁸All chicks imported into Senegal are sexed, which means that egg producers do not have the problem of rearing and then having to sell off male chicks (which is sometimes attempted as a secondary line of activity).

2. The technology of commercial poultry production

Virtually all Senegalese commercial poultry are kept under confinement on deep litter. There is no reported use of battery cages, although the technology is known. Any house can be a home to poultry so long as it is dry and well ventilated. For the most part, the houses visited in the present exercise satisfied these criteria, although many appeared excessively costly. Cost of housing is the single greatest out-of-pocket expense in entering the poultry business (in this instance CFA 300,000 is a reported minimum).

Birds kept on deep litter must be well watered and properly fed, in addition to being maintained in a healthy condition. Owners look after the vaccinations and health program for their flocks; the needed materials are imported and sold through private outlets. Unlike the situation seen in other West African countries, most notably Nigeria, the attending staff seem attentive to their charges: no empty water troughs were seen and little spilled feed was observed. This last reflects the use of good feeders, which cannot be upset.

Little evidence of cannibalism or serious pecking was observed. De-beaking is practiced. At least one producer uses 'spectacles' for his birds to discourage pecking, a fairly sophisticated practice (the eye covers are locally available, suggesting wide demand).

Birds are typically culled. This appears to have become a routine practice only in recent years. And birds are kept in flocks, uniform as to breed and age. This too appears a recently learned practice, as only six years ago it was not widespread.

The fact that the above practices are both generally known and utilized suggests that from a technical point of view the industry is growing on sound foundations. It implies that most poultrymen are aware of good practices which, when adopted, can raise the competitive capacity of the operation.

Farmers can improve their performance only when they have some standards with which to measure individual performance and some method by which flock-specific measures can be taken. This requires flock record-keeping. Here again the Senegalese farmers appear progressive. All of those spoken to kept records with which they could calculate rates of production and feed-egg and feed-meat ratios, with respect to age. What many could not do, it seems, is effectively interpret the numbers. When asked, more than a few poultrymen gave theoretical rates of production rather than their own, even after accurately describing their record

systems, which ought to have produced the necessary figures.¹⁹ There is clearly much room for improved poultry management, even among the better established operations.

3. The economics of commercial poultry production

Commercial poultry production is a very management-intensive activity. Given this, and the industry's propensity toward economies of scale, it is not surprising that individual firm performance varies greatly with respect to the sector's average cost function; a wide scatter of individual firm observations should lie about any statistical average variable cost (AVC) that could be calculated. There are scores of significant sources of cost: for example, the loss of birds just before the point of lay or sale (the living must pay for the dead, which puts into relief the vital importance of good health support); the slow rate of growth to maturity for any cause; waste of feed for any reason; poor watering (a day's thirst can stop lay for a week).

In broilers, the inability of the firm to find an outlet for a flock at point of sale (aged, say, eight to nine weeks), means that the farmer has to support the flock. It is likely, under competitive conditions (and especially when non-specialist stock is used), that even a few extra days means net loss. If the final price is simultaneously being driven down by others dumping flocks (an important source is exhausted hens, being disposed of at 60 weeks of age; these weigh about 1.5 kg, are very suitable for the stew pot, and are sold for whatever the market will accept), his/her situation worsens. If (s)he routinely cannot sell in the tenth week, the operation will go out of business.

Similarly in the case of layers. Fewer poultrymen go in for egg production: the rate of capital turnover is much slower, the risk of loss greater as flocks are kept longer, the sensitivity of layers to stress affects lay, etc. A 10 percent mortality of stock prior to lay can make the difference between profit and loss. Once in production, the flow cannot easily be controlled. Eggs can be kept unchilled only for up to a week under proper conditions and still be usable as table food. Few farmers have the capacity to hold stock; egg gluts are a commonplace occurrence in West Africa, as farmers try to unload production.

In each instance, meat and eggs, good management is vital if the farmer is to stay competitive, but even then, to survive (s)he must find timely and regular outlets for the product.

¹⁹ Poultrymen give out widely varying guesses as to the egg-laying potential of their white leghorns, to give an example. These range from 200 to an unbelievable 380 eggs per year. The accepted figure for the breed is about 220.

Poultry producers must contend with a number of factors which--if not overcome--can wipe them out. In fact, most, perhaps 90 percent, probably will not survive five years. Entry charges--house, 500 broilers, and 10 weeks of feed alone amount to several thousand dollars (estimates vary so widely and are the product of so many local factors that a number is misleading), and a layer operation is higher yet--mean that both amortization and operating costs are not insubstantial. Investment costs will rise if the farmer attempts to expand the operation to attain future lower unit costs. One large farmer says that he costed-out a full 5,000-layer scheme for bank consideration, and that the full cost to enter, not including land, was CFA 22,000,000 (above \$60,000). (This assumed top-of-the-line housing.)

Perhaps the most serious problem facing the industry--and individual poultrymen too, although they can do little about it--is the limited final market. The market consists essentially of a share of the one to two million inhabitants of the arrondissement of Cap Vert (and Thies), which includes 60,000 non-native permanent dwellers and 10,000 transient expatriates.

No systematic study has been made of Senegalese food habits or poultry consumption, but certain aggregate tendencies have been deduced.²⁰ Poultry product consumption figures can be estimated by subtracting European and expatriate consumption from the total. Expatriates (including Lebanese) eat on average 200 eggs annually and 12 kg of chicken. Africans eat mainly bush chicken and almost no eggs. Traditional Senegalese cuisine makes almost no use of eggs, which are seen as snack food, served hard-boiled and eaten as a substitute for peanuts and mangoes. There may be some change in the urban setting, where the level of egg and meat consumption may approach the European level as African conditions begin to approximate European income and education. (Obviously full equality today has been reached by only a tiny fraction.)

Consumption is growing: from 1975 to 1980 consumption of eggs more than tripled, while that of meat grew 160 percent. African consumption was estimated at that time to be 2,000,000 dozen eggs and 280 tons of chicken, or 20 eggs and 0.25 kg of (non-bush) meat per capita.²¹ This is believed to represent 60 percent of the egg production and 30 percent of the meat,

²⁰ Most of the consumer information derives from the Etude de factibilité (1980) previously cited.

²¹ There are an estimated (1980) six or seven million bush chickens, virtually all of which are eventually eaten. This amounts to 4,000 tons annually for Senegal as a whole. Senegal has a population of 5.5 million, growing at 2.9 percent per year.

yielding a total of 360,000 dozen eggs and 933 tons of meat annually. (In terms of weekly delivery the equivalent figures are 50,000 dozen eggs and about 11,000 birds.)

The typical (here, the statistically average) urban African eats one egg every two weeks (a figure also found elsewhere in West Africa). Why are eggs not more popular? Their nutritional importance is not well understood; indeed, many local beliefs consider eggs injurious to health. Eggs are not filling, an important consideration for a people used to porridge. There is a concern about keeping them fresh. And the price is high compared with typical incomes (average daily income is approximately CFA 1,600; an egg costs CFA 30).²²

Egg prices were stable for many years prior to 1981, as was true for broilers (while fish prices doubled). Chicken prices have not risen as much as beef or fish, and the increases in costs of production have been offset by cuts in the marketing margin.²³ Price has also been affected by the ease of entry into broiler production. Both egg and broiler prices have increased since 1979, however (at an average rate of about 10 percent a year through 1983):

<u>Year</u>	<u>Prices (in CFA)</u>	
	<u>Eggs (each)</u>	<u>Meat (kg)</u>
1977	31	785
1978	31	757
1979	33	749
1980	36	786
1981 (import ban)	40	855
1982	43	989
1983	49	1,093

²² West Africa in general and Senegal in particular are replete with widely told tales of the evil effect on one's character and physical well-being of egg consumption. If children are given eggs they may become thieves--a widely quoted belief from Senegal to Cameroon. Or, eggs have ill effects on pregnant women. More to the point, the thrifty note that an egg eaten is a chicken forgone. Eggs, however, are the cheapest source of protein on a weight basis (in 1979 the relative prices of protein were: eggs 30 CFA each [50 gr], or CFA 600/kg; chicken, CFA 942/kg; fish, CFA 693/kg; offal, CFA 729/kg).

²³ In Senegal as a whole, 77 percent of meat comes from ruminants, 12 percent from chickens, and 11 percent from fish (representing 5 kgs annually). In Cap Vert, fish is much more abundant and per capita consumption of fish is 46 kg annually.

Appendix B. A Special Case in Contract Farming

It has been noted that contracts are, for the most part, set up to arrange for sales of particular lots of live birds or deliveries of eggs, to be sold at the spot price at the time of delivery. The conditions of longer term arrangements between institutions and producers have been remarked as well. One exception stands out, one that cannot be generalized but is interesting on its own merit and shows that variations are possible. A senior member of the local CARITAS staff, M. Lefevre, operates his own broiler business, Marika, established four years ago. The farm moves 800 broilers weekly (or over 40,000 annually). Although broilers are moved through his store in the Rufisque area (Pikmine-Taliboumak), the firm is unusual in two ways. First, it has created a network of contract buyers. Second, it, alone, has set up a small group of out-growers who supplement the Marika production.

Using a sales force of six agents, who work on commission (rather on the lines of an Amway agent), Marika has developed up to 6,000 individual monthly contracts, which commit the buyer to take an agreed number of dressed broilers monthly. The salesmen work where wage and salary earners congregate (factories and other enterprises) to sign up buyers. Payment is made at time of pickup, although tardy payment is permitted if the buyer agrees to a 2 percent monthly surcharge. If 15 birds are ordered at a time Marika will deliver, otherwise pickup occurs at the Rufisque store. The market margin is CFA 100 if the bird is picked up at the store. Delivery costs an additional CFA 100.

When demand gets beyond Marika's capacity, the company can turn to its backup system of six out-growers, with whom it has contracts. The contract specifies that 80 percent of the farms' output must go to Marika. The firm extends credit in the form of chicks, feed, and technical assistance (especially for health control). When credit is offered, the payback arrangement depends upon the amount extended. Marika charges an interest rate of 3 percent (every month?) on the outstanding loan. Marika pays the supplier about CFA 25 above the spot price for broilers. Lefevre says he will go to court to enforce contracts but has never had to. (See Appendix F for copy of a contract.)

The model apparently has not been successfully copied by other Senegalese poultry or egg producers.

Appendix C. Survey Findings

An effort was made to add a number of contract farmers to the list of persons interviewed during this mission. The only source of persons was the membership list of AVICAP. The constraint of time limited interviews to those who had contracts, and no effort was made to develop a random sample of all producers. The President of the co-op, Amadou Dienj, identified all members who were likely to have contracts. This list was reduced by the availability of usable addresses, which were for the farm site rather than home. On our actual arrival at the farm, the owner was often found to be unavailable. In practice, rarely could more than one interview be managed daily, and only fifteen were finally interviewed. A questionnaire was used (Appendix E). Both investigators engaged in the interviews when they were conducted in French. When in Wolof, the Senegalese took the lead. A summary of the findings follows.

Of the farmers interviewed, a bit more than half raise broilers. Only three units were in both operations. One broiler producer moved 10,000 birds monthly, and only two from 500 to 1,000. The more typical have from 1,000 to 5,000 on litter; these are turned over monthly. The eight egg farms were even more skewed upwards, four having more than 10,000 birds on litter. These are not small enterprises; even the smallest represent a net worth in the highest local income deciles. Almost all of the farms were owned and operated by Senegalese, only two by Lebanese. And only two were women.

The typical interviewee looked on poultry as his secondary line of work. A half dozen had large farms, where the poultry activity was one of several, including orchards, vegetables, occasionally dairy, livestock, and even (surprisingly for a Muslim country) swine. A larger number were civil servants. A few were retired persons, supplementing pensions. Only three were men in their active years who viewed it as their principal employment.

The farms (many as small as a hectare in size) are often located on wasteland opened up to private purchase 15 years ago by the government. The land had irrigation potential, however, and the investors have drilled wells, laid out irrigation systems, and created prosperous multi-enterprise farms. The sort of investment necessary to create these farms would be impressive anywhere in Africa--a minimum investment to create a poultry enterprise, based on conversation and on-the-ground evaluation, is \$2,500 to \$3,500.

All of the operators attempt to establish regular market links, but 3 of the 15 do not presently have them. One, a woman, felt her farm was too small (500 broilers) to become involved;

she depends on AVICAP. Another has not been able to find a suitable partner, and the third, Hajjar, does not now want any. The majority currently have contracts.

Contracts were viewed as very desirable assets. The most important reason given was security, followed by improved ability to plan, and reduced risk. The undesirable aspect of contracts was widely viewed as delayed payment.

Among those who presently have or have had contracts, the majority of their contracts have been with institutions, followed by wholesalers. Contracts with individual buyers were a distant third. With only three exceptions, contracts were oral. In almost every instance the seller was promised the spot price at the time of sale.

Most contracts include some specifications as to quality and time of delivery. In the case of eggs, the date of delivery is most commonly cited, followed by size of egg, and color. Size of egg is given only as large. In practice this is taken to mean most eggs; the very small are given away as "cadeaux." Broiler producers report that weight is the most common qualification, followed by date of delivery.

Producers are usually required to deliver their product. All had access to a telephone.

Appendix D. Sources

1. Government materials

Etude de factibilité sur le développement de l'aviculture au Sénégal. Dec. 1980. Société Sénégalaise d'engrais et de produits chimiques.

La production avicole au Sénégal. Jan. 1984. Directeur d'élevage, Dakar.

Demand d'aide au développement de l'aviculture au Sénégal. Jan 1, 1984. Ministry of Rural Development. Report to FAO.

Filière avicole et porcine dans les états de l'union monétaire ouest africaine (U.M.O.A.). March 1984. West African Development Bank.

2. Persons interviewed

a) Government

A. Bouna Nian, direction de l'élevage, Dakar
M. Djiop, directeur, centre national d'aviculture

b) Business

Makhal Danfakha, President, Chamber of Commerce
Amadou Dienj, President, AVICAP
F. Dieye, marketing officer, AVICAP
M. Diop, marketing officer, SSEPC (Soc Sénégalaise d'engrais et produits chimiques)

c) Farmers

Manour Filfili, business manager, ranch Filfili
M. Lefevre, CARITAS and MARIKA
M. Ababacar N'gom, Malika
Nazim Kassir, Keur Daoua Sarr
Joseph Hajjar, Rufisque
Abdou Diop, Bayakh
Ababcar Diagu
Mme Arame Diop
Fatou N'diaye
Massy Diano
Sengour Diop
Amadou Borisso
Cherif Diouf
M. Oreng

A. Khaly Diouf
Ibrahim Siouf (?)

d) Buyers

Teranga Hotel, Arthur Beye, food products mgr.
Novotel, M. Abdoulaye Samb, food products mgr.
Hotel Independence, Mme Riketi, food products mgr.
Restaurant Rustique, Daniel Froger, manager
Restaurant Pasha, Bernard Naldony, manager
Demel, M. Fadia Thioune, commercial director
Supermarché, M. Diop, purchase manager
Score, purchase manager

e) Donors

Sarah Jane Littlefield, Mission Director, USAID
George Carner, Deputy Director, USAID
Clay Black, Economics Officer, US Embassy
John Suttor, Ford Foundation
I. Ouedraogo, food policy study, Michigan State
University

f) Statistics

Direction statistique, ministère de l'économie et
du finance

Appendix E. Farmer Questionnaire

QUESTIONNAIRE FOR THE FARMERS

I. GROWER DATA

- a) Do you keep your chickens in flocks segregated by race and age? _____ YES/NO
- b) In the case of layers, how many grower flocks do you usually keep, how many laying flocks do you usually keep and what were their original sizes.

	<u>Orig. Size of Flock</u>	<u>No. of Deaths</u>	<u>Race</u>
Grower	: _____	: _____	: _____
	: _____	: _____	: _____
	: _____	: _____	: _____
Layer	: _____	: _____	: _____
	: _____	: _____	: _____
	: _____	: _____	: _____
	: _____	: _____	: _____

- c) In the case of meat birds:

	<u>Orig. Size of Flock</u>	<u>No. of Deaths</u>	<u>Race</u>
1	: _____	: _____	: _____
2	: _____	: _____	: _____
3	: _____	: _____	: _____
4	: _____	: _____	: _____

- d) In the case of meat birds what age do you:
- i) Usually sell? _____.
 - ii) What weight are they at sale? _____.
 - iii) What is the estimated kg feed/kg weight? _____.

e) In the case of hens:

- i) What is the usual kg/dz eggs conversion? _____.
- ii) At what age (in weeks) do you usually sell old hens? _____.
- iii) How many eggs per hen do you usually get? _____.

f) What percentage of your birds do you usually lose? _____.

What are the causes _____

1st Importance

2nd Importance

3rd Importance

g) Do you cull your flocks? Yes/No _____ Explain _____

II. BACKGROUND

a) Is poultry your most important line of work (i.e. your principal source of income)? _____ YES/NO.

If not what is? _____.

If retired, what was your career work? _____.

b) How long have you been a poultryman? _____.

c) Where did you learn poultry husbandry? _____

d) Your present age? _____.

III. MARKETING

a) How do you usually arrange to sell your product?

	<u>Contract</u>	<u>Thru' Coop</u>	<u>Other, Explain</u>
Eggs	:	:	:
	:	:	:
Meat	:	:	:
	:	:	:

b) Which means do you prefer _____.

Why? _____

c) In your opinion what are the good points of contracting?

- 1. _____ 2. _____
- 3. _____ 4. _____

What are the bad?

- 1. _____ 2. _____
- 3. _____ 4. _____

d) If you never contract, why? _____

e) If you contract, with whom do you usually collaborate? (specify eggs or meat)

- i) Stores _____
- ii) Wholesaler _____
- iii) Institution (hotel, army, school, hospital etc.) _____
- iv) Cooperative _____
- v) Other _____

f) What are specifications of your typical contract?

	Meat	EGGS
Weight	: _____	: _____
Color	: _____	: _____
Size	: _____	: _____
Date of Delivery	: _____	: _____
Which inputs are provided by buyer	: _____	: _____
Credit Advance	: _____	: _____
Quantity (specify)	: _____	: _____
Who delivers/picks up	: _____	: _____
Give technical help	: _____	: _____
what processing, if any	: _____	: _____
Contract, oral/written	: _____	: _____
Other	: _____	: _____

g) When do you agree on price? _____
 At time of contract _____
 At time of delivery _____

h) What formula do you follow to reach a price? _____

i) In general, do you believe contracts typically work out as planned? _____
 Explain _____

j) Are you typically prepared to trade some final price for security of sale? _____

NOTE: If farmer does engage in contract work, and uses a written contract, try to get a blank contract form.

Appendix F: An Example of a Poultry Contract

