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**A Strategy for
the Development
of Four Districts
in Western
Kenya**

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PREFACE

This report contains the findings of a study intended to identify opportunities and approaches for enhancing the economic development of western Kenya. The study focused on two districts in Nyanza Province, Kisii and South Nyanza, and two in Western Province, Kakamega and Busia. All four districts are characterized by high population densities and medium to high potential for agricultural production. This part of the country, adjoining Lake Victoria, has been designated by the Government of Kenya (GOK) and by the United States Agency for International Development (USAID) as a priority area for new development initiatives during the 1980s.

At the request of the GOK and USAID, Development Alternatives, Inc. (DAI) fielded a five-person team in late 1981 to review the development prospects and potential of four districts in western Kenya. The team consisted of Gary Kilmer (team leader and rural enterprise specialist), Tony Babb (agriculturalist), Elliott Morss, (regional planner), Robert Bates (institutional development specialist), and Abdi Zahedani (economist). Field work was carried out in November and early December. Because of delays in receiving comments from USAID and the GOK, and conflicting travel schedules of the DAI team members, revision of the draft report submitted in mid-December has taken longer than originally anticipated.

This report presents an overall strategy for accelerating the pace of development in western Kenya, with special attention to the agricultural and rural industrial sectors. It does not contain detailed feasibility analyses of specific project proposals, nor should it be read as a comprehensive project identification document. It is meant to provide guidance to the GOK and to USAID, as an interested donor, on the major elements of a long-term program to improve agricultural productivity and create additional employment opportunities in western Kenya.

The team is grateful for the excellent cooperation it received from the many individuals who assisted in organizing the research effort and willingly submitted themselves to a seemingly endless series of interviews. Particular thanks are due to Mr. Barak Odhiambo of the Ministry of Agriculture and Mr. John Nyamiobo of the Ministry of Economic Planning and Development, who participated actively with the team throughout the study process and contributed importantly to any credibility our suggestions may have.

Thanks are also due to Mr. Francis Masakhalia, Permanent Secretary, Ministry of Economic Planning and Development, and Mr. Tom Worrick of the USAID Agricultural Office, who organized and coordinated the overall effort. The officers of the Provincial Administration in Kisumu and Kakamega, as well as the staff of the Lake Basin Development Authority, were of great assistance in providing information and logistic support to our team.

Others are too numerous to mention, but their cooperation and openness made the work enjoyable for the team and contributed greatly to the final conclusions and recommendations. The team members and DAI, of course, accept responsibility for analyzing the data provided and arriving at the conclusions that are presented this report.

Gary Kilmer
Team Leader
May 1982

TABLE OF CONTENTS

	<u>Page</u>
PREFACE.	i
CHAPTER ONE	
INTRODUCTION	1
BACKGROUND	1
Purpose.	2
Methods of Investigation	2
Schedule	3
GENERAL CONCLUSIONS.	4
CHAPTER TWO	
REGIONAL SETTING AND CHARACTERISTICS	7
BACKGROUND	7
ECOLOGICAL FACTORS	9
DEMOGRAPHIC FACTORS.	11
Land Scarcity.	12
Migration Patterns	14
Trends in Fertility.	16
EXISTING INFRASTRUCTURE.	16
The Transport Network.	17
Power, Water, and Related Services	20
FOOTNOTES.	21
CHAPTER THREE	
THE MACROECONOMIC SITUATION.	23
RECENT POLICY TRENDS	25
THE IMPACT OF DEVELOPMENT ASSISTANCE	29
DECENTRALIZATION INITIATIVES	32
District Authorities	33
Lake Basin Development Authority	35
FOOTNOTES.	37
CHAPTER FOUR	
AGRICULTURAL SECTOR ASSESSMENT	39
INTRODUCTION	39
LAND USE AND PRODUCTION PRACTICES.	41
Current Land Use Patterns.	41
Potential for Expanding the Land Base for Agriculture.	44
Protection of Natural Resource Base.	47
ANALYSIS OF CONSTRAINTS TO AGRICULTURAL PRODUCTION	50
Introduction	50

Research, Extension, and Training.	52
Soils Management	54
Livestock Disease.	55
Input Supply	58
Production Credit for Small-Scale Farms.	61
Marketing of Agriculture Outputs	64
PROPOSED INITIATIVES	67
Introduction	67
A General Strategy for Agriculture	68
Policy and Program Changes	69
Proposed Initiatives in Technology Development	69
Farming Systems Research and Extension	70
Soils Management, Research, Extension and Training Projects.	71
Livestock Forage and Fodder Crop Promotion	72
Animal Traction and Farming.	73
Soil Conservation and Tree Production.	73
Proposed Initiatives in Cash Crops	73
Proposed Initiatives in Agricultural Services.	76
FOOTNOTES.	77
CHAPTER FIVE	
RURAL ENTERPRISE: SECTOR ASSESSMENT	79
INTRODUCTION	79
CURRENT STATUS	79
ASSISTANCE PROGRAMS.	84
Industrial Credit.	84
Technical Assistance Programs.	95
MAJOR CONSTRAINTS.	97
Manpower	97
Entrepreneurial Capital.	99
Rural Infrastructure	100
Summary of Major Constraints	100
PROPOSED INITIATIVES	101
General Strategy	101
Agro-Industrial Opportunities.	102
Project Possibilities.	105
FOOTNOTES.	115
CHAPTER SIX	
ALTERNATIVE MODELS FOR PROMOTING ECONOMIC DEVELOPMENT IN WESTERN KENYA.	117
Line Ministry Projects	119
Regional Projects.	121
Provincial Projects.	122
District Projects.	123
Nongovernmental Projects	127

ANNEX A.	A-1
ANNEX B.	B-1
ANNEX C.	C-1
ANNEX D.	D-1

LIST OF TABLES

Table	Title	Page
1	District Populations, Growth Rates and Densities	12
2	Net Migration Flows, 1969-79, by District	14
3	Producer Prices for Principal Crops	29
4	Kenya: Medium- and Long-Term Public Loan Commitments and Disbursements	31
5	Rural Enterprise Activity Kisii District.	80
6	Rural Enterprise Activity Kakamega District . . .	82
7	Rural Enterprises Activity Busia District	83

CHAPTER ONE INTRODUCTION

BACKGROUND

The commissioning of this study by the Ministry of Economic Planning and Development reflects the interest of the Government of Kenya (GOK) in better coordinating and enhancing economic development efforts in western Kenya. This region, underdeveloped commercially, contains about 32 percent of the population of the country and a large share of its most productive resource, fertile land.

The region has never really caught up with other productive parts of the country since colonial times, when it was seen as a source of agricultural labor for European-owned farms in the Rift Valley, and when the production of most cash crops by Africans was not only discouraged but actually prohibited. The GOK now sees that the future prosperity of Kenya as a whole depends, to a large extent, on increasing the agricultural and industrial productivity of this region and integrating it more effectively into the national economy.

Western Kenya (Nyanza and Western provinces) is also one of the two areas identified as priority target areas by the United States Agency for International Development (USAID) in its Country Development Strategy Statement (CDSS) for FY 1984. The first of the three development objectives listed for USAID/Kenya in this document is "increased rural production, employment and income." The subject of this study is thus consistent with USAID's medium-term program needs and should also contribute to the further definition of longer-term program efforts.

Purpose

The aim of this study, as presented in the team's terms of reference, was to "suggest economic development approaches which will result in expanded production and contribute to economic growth" in four districts of western Kenya--Kisii, Kakamega, Busia, and South Nyanza. The terms of reference specified that particular attention should be given to actions that would:

- Reduce population pressure on the land;
- Increase employment opportunities;
- Increase agricultural production; and
- Prevent the degradation of existing land and water resources.

The full terms of reference for the study team are included as Annex A following the body of this report.

Methods of Investigation

With such a broad mandate and a limited amount of time--six weeks--to carry the mandate out, the team had to make important choices about how to proceed to maximize the value of its analysis and suggestions to the GOK and USAID. Three sources of data were identified and used:

- Review of a broad range of pertinent documents in Washington and Nairobi;
- Interviews with representatives of relevant government parastatal and private sector institutions in Nairobi as well as in the four districts to be studied; and
- Visits to as many agricultural research stations, industrial estates, village polytechnics, private farms, and other sites as possible in the area within the available time.

The findings of all three activities are merged in the final document to give a comprehensive picture of development prospects in the four districts.

The team organized its field work around a district by district analysis of six critical issues:

- Population pressures;
- Agriculture production systems and potential;
- Industrial development status and prospects;
- Credit availability and management;
- Infrastructure development and needs; and
- Institutional capacity.

In many instances the team had to sacrifice the opportunity to study particular topics in-depth in order to obtain a comprehensive understanding of area development potentials and constraints. This report is a preliminary document intended to indicate fruitful and productive directions that development activities in the area might take.

Schedule

Three of the team members began collecting and reviewing basic documents in Washington, D.C., on October 28, 1981. They then went to Nairobi, arriving on November 4, where they were later joined by the remaining team members. The work through November 14 was concentrated in Nairobi, where interviews were held with representatives of various government departments, parastatal agencies, and private sector organizations and businesses.

On November 15 the team moved its base of operations to Kisumu, from where it was possible to travel throughout the four districts to conduct the necessary field research, meet, with public, parastatal, and private sector representatives and visit

field sites to observe agricultural and industrial development activities first hand. This phase continued until December 2 when team members held a preliminary briefing for Provincial and Lake Basin Development Authority officials.

Back in Nairobi, the team conducted briefings for both the Ministry of Economic Planning and Development and USAID. Team members prepared a draft report that they submitted to the GOK and USAID for comment. The team departed on December 12. This report was finalized in April and May 1982. This version takes into account comments on the earlier draft by USAID and the GOK.

A complete bibliography of the documents reviewed in preparing the study is included as Annex B to this report. A list of institutional representatives interviewed is included in Annex C, and a list of the sites visited is presented in Annex D.

GENERAL CONCLUSIONS

Striking contrasts exist among the four districts in terms of population density. The team did not find, however, that the preparation of separate reports on the basis of population density, as was suggested in the terms of reference, was necessary or advisable. There are differences in the types of specific activities suggested for the various districts; these suggestions are based on agroeconomic conditions, demographic patterns, and other factors. But the general strategies apply to all of the districts, if not to the western region as a whole.

The second general conclusion is that the real challenge for the study team was not so much in assessing development needs in the four districts as it was in identifying cost effective means of addressing them, given the very real constraints on the financial and human resources of the government. The USAID CDSS (p. 33) notes that "two of the most severe constraints to current public sector development programs [are] the recurrent expenditure

burden of government programs and the strained capacity to implement programs effectively." We concur with this assessment and have tried to identify projects that would be productive without exacerbating those problems.

Chapter Two of this report provides an overview of western Kenya, highlighting the main features of ecology, demography, and infrastructure within the region that set the parameters for development programs over the next few years.

Chapter Three summarizes the macroeconomic situation in Kenya, its recent policy trends, the impact of development assistance, and the ongoing efforts to decentralize development planning and implementation. This chapter thus defines the broader national framework in which a program for the western region must operate.

Chapter Four presents a general strategy for the regional economy's agricultural sector, with an emphasis on technology development; the promotion of certain cash crops; and the strengthening of agricultural services, particularly input supply and marketing.

Chapter Five offers a complementary strategy for the rural enterprise sector, based on improved effectiveness of credit management systems, increased productivity of light manufacturing industries, and development of small- and medium-scale agroprocessing industries.

Chapter Six examines the range of institutional vehicles for delivering development assistance within the strategy outlined in Chapters Four and Five. Specifically, this chapter considers the comparative advantages of various levels of government, especially district institutions and private sector and non-governmental organizations, in implementing the proposed initiatives.

CHAPTER TWO
REGIONAL SETTING AND CHARACTERISTICS

BACKGROUND

The area examined in this study consists of four administrative districts in what is commonly known as western Kenya. Generally this term is used for the portion of the country west of the Rift Valley and specifically for Nyanza and Western provinces, which are situated in the southwestern corner of the country adjacent to Lake Victoria. The vast majority of Kenya's population and arable land resources is concentrated in the southwestern quadrant, between 1 degree north latitude and 2 degrees south latitude and between 34 and 38 degrees east longitude. Western and Nyanza provinces, representing only 3.6 percent of Kenya's land area, contain 32 percent of its population.

The economy of western Kenya is based on two interdependent activities: agricultural production, primarily of food crops, with maize being dominant; and wage labor or salaried employment. Relatively little cash is earned within western Kenya from the sale of agricultural produce; the regular or seasonal jobs that provide most cash income tend to be located outside the region.

This pattern is well established, having emerged more than 50 years ago when the colonial administration's land and labor policies deliberately encouraged migration from the area to centers of wage employment on European-owned farms and restricted opportunities for cash crop production in the so-called native reserves. The end of colonial rule in Kenya eliminated those policies but did not effectively transform the economy of western Kenya. No dramatic changes have occurred in the 18 years since independence, although some cash crop farming has been introduced, and some investment has been made to increase industrial employment opportunities.

Although western Kenya is not homogeneous, it does have an identifiable place in the country's overall economic system, primarily as a source of migrant labor to urban centers such as Nairobi, Mombasa, and Nakuru. Furthermore, in two of its basic characteristics the area resembles a microcosm of Kenya's overriding national problem: it contains a densely settled and rapidly growing population, and its small-holder agriculture is much less productive--in terms of yield per unit of land--than the potential of the resource base would allow. These problems not only threaten the welfare of those people who live in western Kenya but also have implications for the country as a whole. Given the magnitude of Kenya's food supply requirements and the need for additional employment opportunities to keep pace with explosive population growth, western Kenya is certain to command greater attention from the GOK and from external donor agencies in coming years.

The terms of reference for this study were prepared by the Ministry of Economic Planning and Development (MEPD) and USAID and called for separate analyses of two "low population density" districts (South Nyanza and Busia) and two "high population density" districts (Kisii and Kakamega). The administrative boundaries of the districts are not wholly consistent with differences in ecological and economic potential. But the distinction illustrates an awareness within the GOK that no uniform set of development initiatives would be appropriate for all of western Kenya and that future programs and projects will have to be tailored to fit local conditions.

The selection of four districts rather than all seven within Western and Nyanza provinces does not imply that future development investments will be limited to those four. In a study of such short duration, coverage of even four districts was necessarily superficial. There appear to be valid reasons for excluding the other three districts--Bungoma, in Western Province,

Siaya and Kisumu in Nyanza Province--from the study, given the limited time available. Bungoma differs from the other six districts in terms of its role as a large commercial producer of maize; Siaya shares many of the same features as Busia and South Nyanza, so that analyses for those districts may be considered applicable to Siaya; and Kisumu is somewhat atypical of western Kenya because it contains a large urban center (Kisumu town) and a vast area in the eastern part of the district almost wholly devoted to sugar cane production for three large factories. While the sugar industry has major significance in parts of South Nyanza and Kakamega, it does not dominate the economy to the same degree as in Kisumu District.

The remainder of this chapter examines three factors that have shaped the economic development of western Kenya to the present: ecological features; demographic trends; and the provision of infrastructure such as transport, power, and markets. This material is presented to set the stage for the more detailed sectoral analyses that appear in later chapters.

ECOLOGICAL FACTORS

Ecological variation within the four districts studied correlates closely with altitude. The southern tip of Busia and the western boundary of South Nyanza lie along the shores of Lake Victoria, whose elevation is 1,133 meters. At the other extreme, elevations approach 2,000 meters in the eastern portions of Kisii and Kakamega districts. The 1979-83 Kisii District Development Plan, for example, classifies three zones: one belonging in the Lake Victoria basin (below the 1,500 m contour line), one consisting of middle lands (1,500-1,800 m), and one consisting of highlands (over 1,800 m). Yet the changes in soils, temperature, rainfall, vegetation, and land use are gradual rather than dramatic from east to west through Busia into Kakamega and from the town of Homa Bay in South Nyanza inland toward Kisii. Because

large transitional zones span the Busia-Kakamega and South Nyanza boundaries, labeling districts on a high/low potential basis is misleading.

In terms of rainfall, there is a wide gap between the lakeshore areas (750-1,000 mm per annum) and the highland areas of Kakamega and Kisii, where precipitation averages 1,750-2,000 mm. A rainfall map of western Kenya with gradients at intervals of 250 mm thus shows five distinct bands. In the eastern portion of Kakamega, a bimodal pattern prevails, with heavy rains in both the March-May and August-September periods, permitting cultivation of two maize crops in a year of average to good rainfall. Elsewhere in these four districts, the "short rains" season is less dependable, and only secondary crops requiring less rainfall are planted during this season.

Virtually all of the land in these districts is suitable for agriculture, although the intensity of utilization varies considerably according to soil quality, rainfall, and population density. In the National Atlas of Kenya, a map illustrating ecological potential divides western Kenya into two zones:

- One zone, covering most of Kakamega and Busia north of the equator, and the eastern half of Kisii, consists of "forest and derived grasslands and bushlands, with or without natural glades. The potential is for forestry (with local wildlife and tourist development) or intensive agriculture, including pyrethrum, coffee and tea at the higher altitudes. The natural grassland, under intensive management for optimum production, supports one stock unit per 1-1.5 ha dependent on grassland type."
- The second zone, covering almost all of South Nyanza, southern Busia, and western Kisii, is classified as "land not of forest potential, carrying a variable vegetation cover (moist woodland, bushland or 'savanna'), the trees characteristically broad-leaved (e.g., Combretum) and the larger shrubs mostly evergreen. The agricultural potential is high, soil and topography permitting, with emphasis on ley farming. Areas under range use are still extensive and under close management their stock-carrying capacity is high, at less than 2 ha per stock unit." [1]

Within each zone, the variations in soil and rainfall are sufficiently great to account for large differences in the crop production systems. Thus cotton is a primary crop in central and northern Busia, where sandy loams predominate and rainfall averages 1,250 mm, whereas in southeastern Kakamega, red friable clays are the most common soil type, rainfall averages 2,000mm, and small-holder tea production is well established. Further details on the agricultural production systems of western Kenya are provided in Chapter Four.

DEMOGRAPHIC FACTORS

The rate of population growth throughout Kenya is one of the highest ever recorded and is a factor posing major dilemmas for the country's long-term development. Western Kenya has always been densely settled relative to most other rural areas in the country. As Table 1 indicates, the populations of all four districts included in this study have increased dramatically over the past two decades. The implication of this growth and the adaptive responses of population groups in western Kenya are examined in this section.

The data in Table 1 represent net changes in population over the interval 1962-79. One statistic has a unique explanation: the growth of Busia population by almost 50 percent in a decade. While precise data on the number of refugees, temporary immigrants, and Kenyans returning from Uganda are not available, they very likely account for most if not all of the difference in the growth rate between Busia and the other three districts for the 1969-79 period. Nor is it possible to gauge what proportion of the influx from Uganda represents permanent migration. Certainly this is an option for some of those who have crossed the border. There are very close cultural, linguistic, and even familial and marriage ties between Luhya speakers in Busia and Soga and Gishu speakers in the eastern part of Uganda. In the period before the Amin regime in Uganda, many Luhya speakers had settled in eastern Uganda. Most of them returned to Kenya after 1972.

Table 1: District Populations, Growth Rates and Densities

	Population			Growth Rates		1979 Pop. density km ²	Hectares/persons 1979
	1962	1969	1979	1962-69	1969-79		
Kakamega	600,186	782,586	1,030,887	3.9	2.8	294	0.3
Kisii	519,900	675,041	869,512	3.8	2.6	395	0.2
Busia	172,386	200,486	297,841	2.2	4.0	183	0.4
South Nyanza	480,839	663,173	817,601	4.7	2.1	143	0.7

Source: 1962, 1969, and 1979 Population censuses.

Land Scarcity

While almost all of its land is arable and of medium to high potential, western Kenya has experienced increasing pressure on its land resources as a result of population growth. The district-level data shown in Table 1 indicate the density of settlement, especially in Kisii and Kakamega; when correlated with the data presented earlier on ecological potential, the classifications of these districts as "high density/high potential" appears logical. Yet the district-wide averages do not reflect the seriousness of the situation in certain subdistrict units. In southeastern Kakamega (Vihiga Division), for example, and in Manga Division in Kisii, densities exceed 600 persons per square km. These densities are as high as any found in rural areas of eastern and southern Africa. Under such conditions, there are two processes that pose serious threats to agricultural and rural development:

- The subdivision of land units into increasingly smaller units, in some instances below 0.5 ha, with a corresponding decrease in the landowning family's ability to provide basic crops for its own subsistence, let alone enter into the production of cash crops; and
- The emergence of a new category in the rural population: family units headed by persons who neither own nor have access to land.

The scarcity of land resources in western Kenya is not a recent phenomenon. As early as the 1930s, district administrators' reports and sociological studies commented on the steady population growth in the area and on the virtual disappearance of unclaimed or unused land. Well before the advent of formal land registration leading to freehold tenure in the 1960s and 1970s, de facto ownership of land was an established pattern throughout western Kenya. A variety of socio-cultural mechanisms served to allocate land in the Luhya, Luo, and Gusii communities. These were flexible enough to satisfy the land requirements of most claimants (for example, maternal nephews, in-laws, and other "strangers" from clans outside the immediate locality) who did not fit precisely into the clan structures that governed traditional land tenure. Older people in western Kenya with experience in land matters maintain--and it seems reasonable to believe them--that no one willing and able to make use of land was excluded from doing so.

With the establishment of freehold tenure, however, a cash-based system of land transactions came into existence. Individuals who sold their land no longer had a guarantee of taking up land somewhere else with relatives; they would have to buy it or end up with no land at all. The subdivision of finite land units for members of the next generation also has led to a relentless shrinking in the average size of landholdings.

Although pressure on the land is much more acute in the "high potential" areas than in the areas of lower altitude and rainfall, the difference is one of degree. The same tendencies can be observed even in those parts of Busia and South Nyanza where some land lies fallow and where the mean size of landholdings is 2 ha or larger. The introduction of large-scale sugar schemes at Mumias in Kakamega and at Awendo in South Nyanza has contributed to the acceleration of activity in the land market and changes in land tenure patterns by increasing the economic returns to land.

The response of various population groups in western Kenya to these changes needs to be examined in terms of both migration patterns and trends in fertility. These two issues are briefly discussed below.

Migration Patterns

Migration from the west to other parts of Kenya, both permanent and seasonal, has a long history. It first emerged in the colonial period, when the imposition of head and hut taxes on the African population forced many adult males to leave their home areas to obtain wage employment and earn cash. The primary motive of the colonial government was to ensure a supply of labor for European-owned farms, while a secondary aim was to generate revenue for routine administration and development activities within the native reserves. By drawing large numbers of men out of the rural districts for part or all of the year, this policy undermined the indigenous systems of agricultural production. African farmers were also forbidden to grow coffee, tea, and pyrethrum, the cash crops with the highest income potential for most small-holders.

Table 2: Net Migration Flows, 1969-79, by District

	<u>Net Migration</u>	<u>Net Migration as % of 1969 Population</u>
Kakamega	250,414	32.0
Kisii	61,424	9.1
Busia	21,861	10.9
South Nyanza	85,890	13.0

Source: Orhan Besok, "Estimates of Inter-District Migration Based on the 1979 Census of Kenya," Population and Research Institute, University of Nairobi, November 1981.

Table 2 summarizes data on net migration flows from the four districts to other parts of the country during the interval between the 1969 and 1979 censuses. Two significant points should be noted: the rate of emigration from Busia may be deceptively low, because of the heavy influx of Ugandans during that decade; the comparatively low rate of emigration from Kisii, however, suggests the cultural and sociological factors that differentiate the Gusii from the Luhya and Luo groups of western Kenya in terms of their propensity to emigrate. Luhya speakers from Kakamega and Busia are well represented in all of Kenya's urban centers, as are the Luo, and the leaders of both have figured prominently in the development of Kenya's trade union movement. A much larger proportion of Gusii males, however, have elected to remain in their home district, even in the face of incipient landlessness or diminishing opportunities to maintain agricultural livelihoods. The 1979-83 Kisii District Development Plan estimates that 58,000 Gusii adult males were without title to land as of early 1980, of whom only 20,000 were in regular wage employment. Thus while the other districts have tended historically to export their unemployed and underemployed, Kisii has retained a high proportion of those who are unable to generate steady cash incomes from farming, or have been squeezed off the land altogether.

Even the term "net migration flows" may misrepresent the fluid and dynamic nature of migration patterns. Short-term migration to sites of seasonal employment in agriculture is common. The wage levels and working conditions in such jobs, and in most unskilled and semiskilled jobs available in urban areas, tend to reinforce the historical pattern in which men migrate and women remain at home in the rural areas. Thousands of farm units in western Kenya, as a result, are headed by women for all or part of the year. This situation does not necessarily mean that absent men remove themselves completely from decision making on the farm. They may return at crucial times, or they may send money and

instructions to family members remaining at home. The cosmopolitan orientation of one "rural" community in Kakamega was neatly summarized in a study describing it as a "dislocated suburb of Nairobi." [2]

Trends in Fertility

Besides migration, the second key demographic factor in western Kenya is the trend in fertility. Here, there is striking evidence of sustained high levels, whether measured in terms of the mean number of pregnancies or live births per adult woman, or in terms of the number of children per household. Data from western Kenya correspond closely to those from other parts of the country, suggesting that land scarcity is not perceived as a disincentive to having large families.

Some have argued, in fact, that pressure on the land accentuates the need to develop other sources of income and employment besides agriculture. This implies an investment in raising and educating children who may eventually, if they are successful, be able to repay that investment. At the family level, then, an adaptive solution to land scarcity and rural poverty may be to maximize the number of children who pass through schools, and eventually into the labor market, to increase the likelihood that they will contribute to the support of the family as a whole. At the community level, of course, let alone the regional or national levels, the aggregate results of such adaptive behavior have very different implications. Explosive population growth threatens to overwhelm the capacity of public institutions to deliver basic services and the productive potential of the natural resource base.

EXISTING INFRASTRUCTURE

Links to the wider economy and society of Kenya are a crucial element in any analysis of regional development prospects and problems for the western region. Those links are not uniformly

strong: although large numbers of people have moved back and forth between the Lake Victoria basin and other parts of Kenya, the western region has not been a major source of food for other areas, nor has it emerged as a significant market for products originating in the towns and cities. All communities in the west can be reached in a day's travel (or on an overnight bus) from Nairobi. Within Nyanza and Western provinces, however, infrastructure such as roads, electric power, and potable water is not evenly distributed.

The Transport Network

Railway transport plays a minor role in the present-day economy of western Kenya, although the completion of the railway line at the turn of the century first opened up the western part of the country. Neither Kisii nor South Nyanza is served by the railway; a short segment of the Nairobi-Uganda border line crosses the northern part of Busia; and the end of the spur from Kisumu to Butere extends into the southwestern corner of Kakamega. Expansion of the rail network within western Kenya has been proposed and discussed on numerous occasions, but the very high investment costs make it extremely unlikely that these plans will be realized. Most of the agricultural production zones in the west are far removed from a railhead and are therefore reliant on the road network to deliver produce to those points where railway transport is available.

Transport services on Lake Victoria are even less developed. A regular steamer used to operate between Kisumu and ports in Uganda and Tanzania, but this service was discontinued in the late 1970s. Small boats and ferries provide passenger service between islands in the lake and shore points, such as the town of Homa Bay, in South Nyanza. The South Nyanza District Plan proposes a revitalization program for water transport services, including the refitting of several vessels and renovating piers and wharves at points along the shore. The Busia District Plan makes a case for

improving and expanding passenger services in that district between the ports near the Uganda border and offshore islands and between the major port of Kisumu and shore points to the south.

An extensive network of "classified" roads serves the four districts; the length of these roads is roughly in proportion to the sizes of the districts. There are 1,969.4 kms of classified roads in South Nyanza, the largest of the four; 1,514.5 kms in Kakamega; 1,111.6 kms in Kisii; and 523 kms in Busia.

Tarmac roads account for less than 20 percent of the total kilometers of classified road. The tarmac roads link the respective district headquarters with the national highway running between Kisumu and Nairobi and with the highways running to the Tanzania and Uganda borders.

The district plans describe gradual progress in extending the network of tarmac roads and efforts to improve the existing murrum (earth) roads. In all four districts, serious problems continue to exist with road maintenance during the rainy season. Furthermore, limited resources must be balanced against the competing needs of maintaining already rehabilitated roads and reconstructing roads that have become completely or partially impassable. These problems appear to be most acute in South Nyanza, where the prevalence of heavy black cotton soils creates serious drainage problems in the rainy season. Kisii reports very high costs in maintaining adequate drainage on murrum roads, due to the topography of the district, and Busia reports that less than half of its 523 kms of classified road are adequately maintained.

The district plans identify a common set of constraints to making sustained improvements in the road network. These include a shortage of funds for investment in new road construction or reconstruction; the scarcity of trained manpower within the Ministry of Transport and Communications (MOTC); weaknesses in the

organizational system for road maintenance; and major bureaucratic delays in the ordering of equipment and spares from central MOTC sources in Nairobi.

A major initiative, funded by USAID and other donors, is the Rural Access Roads Program (RARP), which began in 1974. Western and Nyanza provinces are major target areas for the RARP. To date, work has progressed much more rapidly in Kisii and South Nyanza than in the other two districts. The study team visited several work camps belonging to the RARP and was impressed with the efficiency of work and with the adequacy of materials, tools, and supplies on hand. The Swiss technical assistance advisers working with the RARP, however, underscored the scarcity of supervisory and senior staff and the heavy training requirements if the RARP is to be made a sustainable, long-term program.

An ongoing impact study of the RARP has documented its beneficial effects in terms of generating rural employment and suggests that the roads will have a positive impact on agricultural production in the affected areas. By emphasizing labor-intensive methods, the RARP directly addresses several of the key constraints to improvement of the road network in western Kenya.

A comprehensive effort to upgrade the road system, however, remains a long-term proposition and an expensive one for the GOK to consider. In the absence of sustained economic growth in the region, it is unlikely that such an investment will be made. In terms of this report, therefore, the focus will be on activities that capitalize on the infrastructure already in place, as opposed to those that would call for major infusions of capital to create a new transport infrastructure.

Power, Water, and Related Services

All four districts have been included in the planning exercises of the central government's Regional Planning Department. The plans identify a hierarchy of service centers: townships, urban centers, rural centers, market centers, and local centers. Distribution of these centers theoretically corresponds to population density, but in practice, all four district plans indicate physical planning has not proceeded beyond the initial stages. The Kakamega District Plan (p. 92), for example, notes that most of the designated service centers lack basic facilities, such as water, electricity, postal services, and telecommunications, and all-weather roads required under physical planning criteria. This document notes that commercial criteria did not play a significant role in the formulation of the service-center policy of the government.

The facilities that do exist within these four rural districts are unevenly distributed in spatial terms, being concentrated along the tarmac roads and around the district headquarters. In terms of the economic demand for these services outside the area in which they now exist, the distributional pattern seems fairly rational: that is, it does not appear to neglect obvious opportunities for utilization of those facilities. The gradual extension of electrification services by the East African Power and Lighting Company will enlarge the geographic area within which small or medium industries using electric power might be established. At present, there is little evidence that formation of new industrial enterprises has been prevented by the absence of these services. The rapid escalation of costs to consumers makes it problematic whether extension of the power grid will prove to be feasible on economic grounds.

FOOTNOTES

- 1 Survey of Kenya, National Atlas of Kenya, Third Edition, Nairobi, 1970, pp. 28-29.
- 2 Joyce L. Mook, "The Migration Process and Differential Economic Behavior in South Maragoli, Western Kenya," unpublished Ph.D. dissertation, Columbia University, 1975.

CHAPTER THREE
THE MACROECONOMIC SITUATION

The macroeconomic setting was favorable to development initiatives in Kenya for most of the period between independence in 1963 and the late 1970s. In the last four years, however, conditions have deteriorated significantly. Kenya has been subjected to the same external shocks that have affected all the sub-Saharan countries that are not major oil exporters. The cost of imports, especially petroleum, has continued to rise steadily, while the value of exports from Kenya's agriculturally based economy has not kept pace. As a result Kenya has incurred substantial deficits in its balance of payments for the first time, and the steady growth rate of its gross domestic product has begun to decrease.

Kenya's problems are, of course, far from unique. Price increases for petroleum have had a shattering impact on many African economies, especially since 1978. At the same time, world prices for most of the agricultural products supplied by sub-Saharan Africa have been stagnant; the brief boom in coffee and tea prices between 1976 and 1978, from which Kenya benefited enormously, was a striking exception to this general trend. Although there are indications that coffee prices may again enter an upward cycle as a result of an attack of frost on the Brazilian crop, increased import earnings from coffee would provide only partial, temporary relief to Kenya's economic problems. The underlying weaknesses of the economy still need to be addressed, and both the GOK and foreign donors are aware of this problem.

To place the economy on a sounder footing, the GOK must make a sustained effort to make exports--particularly those from agriculture--more competitive. Yet this alone will not achieve the desired results if the country's population continues to grow

at 4 percent or more per annum and the production of food does not increase accordingly. Kenya has traditionally been an exporter of maize and other staple foods to neighboring African countries, although in occasional drought years it has required some emergency food relief from foreign sources. In 1980 the combination of low price incentives and poor weather resulted in a record shortfall in maize production. For the first time Kenya found itself in the role of a net importer of basic foodstuffs, a role it could ill afford to play. During this period the implications of relentless population growth appeared to have an impact for the first time at policy making levels within the GOK. If Kenya loses the ability to feed itself now, with a population of under 20 million, the prospects are ominous indeed if the population doubles by the end of this century, as it is likely to do.

In consultation with the World Bank and the International Monetary Fund (IMF), Kenya has undertaken a major structural adjustment program aimed at redressing imbalances in the economy. The objectives of this program, summarized in the June 12, 1981, World Bank Kenya Country Economic Memorandum and Annex on Agricultural Issues (CEM), are as follows:

If Kenya is to attain positive growth of real per capita income and establish a more equitable pattern of growth, it must revitalize the agricultural sector, restructure the industrial sector to make it more internationally competitive, design government expenditure plans which are consistent with resource availabilities, support growth of the productive sectors and contribute to meeting basic needs, and reduce the rate of growth of population.

While not necessarily as severe as structural adjustment measures being proposed for other sub-Saharan African countries, the program being adopted in Kenya involves relative austerity in government expenditure. The recurrent cost implications of public sector investments are being scrutinized far more carefully than in the past. In particular, the steady expansion of civil service employment can no longer be taken for granted. Nor can it be

assumed that subsidies to parastatals and protection of import-substitution industries will be sustained indefinitely, even if the political costs of reducing them are high. Government austerity is also likely to affect the further extension of educational and social service facilities in the rural areas, despite widespread popular perception that the provision of these services is the government's responsibility.

The World Bank's CEM estimates that in the years 1981-85 Kenya will require \$5.2 billion external capital to support the ongoing program of adjustment and assure steady growth in the economy. The proportion of bilateral aid is estimated at 22 percent and multilateral aid, including IMF support, at 31 percent. Given the objectives of the structural adjustment program and the need to limit growth of the recurrent budget, the use of external resources to finance development projects will need to be carefully monitored. Thus while the World Bank suggests that donors should consider financing local costs and some recurrent expenditures, such assistance should not be offered by donors, nor accepted by the GOK, indiscriminately: it carries real risks of undermining the sustainability of development initiatives beyond the period in which donor assistance of this kind can be provided.

RECENT POLICY TRENDS

The unfavorable macroeconomic situation has presented the GOK with a set of difficult policy choices. The desire to increase incentives for agricultural production has led to a review of agricultural pricing policies, with implications for the price of food to urban consumers and for the financial viability of marketing boards and parastatal institutions. The fact that major distortions exist in the market for Kenya's agricultural commodities is not new, but only in the past year has a commitment emerged within the GOK to undertake policy reforms designed to reduce or eliminate those distortions.

The most convincing evidence of the need for policy reform is in the slowdown of growth in the agricultural sector as a whole and in the decline in production of certain key crops. Adverse weather conditions and the increasing population pressure on land resources account for many of the problems encountered in agricultural production in recent years, and these factors are beyond the control of the GOK. Historically, however, a conscious effort has been made to regulate markets and prices in the national economy. Government-controlled producer prices for the major food commodities--maize, wheat, milk, and beef--have lagged behind the inflation rate. The producer price of maize was actually reduced in 1979, and this affected total output of that crop as well as the volume of deliveries to the National Cereals and Produce Marketing Board (NCPMB). For the first time since the major drought of 1965, Kenya had to import large quantities of maize in 1980 (310,000 tons) and 1981 (an estimated 350,000 tons according to the World Bank CEM). Other crops for which prices are set include rice, sugar cane, cotton, and pyrethrum. Producer prices for the two crops with the highest value for export--coffee and tea--are governed by world market trends rather than government policy.

Traditionally, prices have been set in December following recommendations from the Ministry of Agriculture (MOA) and review by the Ministries of Finance and Economic Planning, prior to a final decision by the Cabinet. The Agricultural Annex to the World Bank's 1981 CEM noted that pricing policy decisions have not given adequate consideration to the relative incentives of producing different crops. One significant trend not fully anticipated by MOA planners has been the substitution of sugar cane for maize in certain areas of western Kenya, especially in the small-holder zones near the new sugar factories at Mumias in Kakamega and at Awendo in South Nyanza.

Related problems have been observed in the performance of the various domestic marketing boards. Rather than encouraging the development of competitive market systems in which small and medium entrepreneurs play a leading role, the GOK has sought to maintain monopolies by the marketing boards over their respective crops. In the case of maize, these efforts have included a ban on the transport of maize between districts, although a considerable amount of illegal trade still occurs.

Critiques of Kenya's marketing system and recommendations to improve it have been forthcoming from academic observers and external donors for nearly a decade. A detailed study was made under a United Nations Development Programme/Food and Agriculture Organization (FAO) project on marketing development between 1976 and 1978. Continuous review and discussion within the MOA have been stimulated by the presence of a growing cadre of trained Kenyan economists and expatriate advisers serving in the Technical Assistance Pool. For those areas of the country where both the farm units and the surpluses of individual producers tend to be small, the importance of informal marketing channels (as opposed to large-scale institutions such as the NCPMB) has become better understood. Many small transactions take place, for which informal channels have proved an efficient mechanism both in terms of accumulating a surplus within a given area and providing for its distribution to consumers. Although the NCPMB enjoys a theoretical monopoly on the market and on the transfer of maize between surplus and deficit areas, it lacks the facilities, manpower, and administrative capacity to fulfill these functions.

There are signs that GOK policy makers are reconsidering the role of parastatals and marketing boards in the economy. Certainly the financial performance of many of them is a source of concern, since large subsidies are required to meet operating costs. Yet to expect massive, immediate deregulation with removal of all price controls would be unrealistic. Given the under-

developed state of private sector marketing capacity at this time, this course would have very high costs in economic and political terms. But a gradual reduction in the degree of government intervention is a very real possibility.

One indication of a significant policy change is the adjustment of producer prices for agricultural commodities announced in December 1981, shortly after the fieldwork for this study was concluded. The price increases reflected a commitment made in the Fourth Development Plan, for the period 1979-83, to bring producer prices more closely in line with world market prices; the changes also reflected advice provided by analysts who had documented the disincentives to production caused by low prices. Table 3 shows the price levels before and after this adjustment in relation to import parity prices computed in late 1981. All changes are to take effect on July 1, 1982, but they will obviously have influenced farmers' planting decisions for the long rainy season beginning in February and March.

The dramatic 37 percent increase in the farm-gate price of maize should have an immediate impact on output, perhaps eliminating the need to import this staple food, as was necessary in 1980 and 1981. There is the risk, however, that the producers' response to the price increase will lead to a maize glut that overwhelms the capacity of the NCPMB to purchase and store the surplus. If this happens, and if local markets are flooded with maize, farmers will not realize the intended benefits of the price increase and may be discouraged from growing maize as a cash crop in the future. Thus while adjustments in the pricing system can improve incentives to small producers, price increases should not be seen as a substitute for improved marketing services--the latter must also be strengthened. Whether through an overhaul of parastatals and marketing boards or through a program of direct incentives to private entrepreneurs, improved marketing services are an essential complement to pricing policy reform.

Table 3. Producer Prices for Principal Crops

Crop	(Ksh) 1981 Official Producer Price	(Ksh) Producer Price as of July 1982	(Ksh) Import Parity Producer Price
Maize	95/90 kg	130/90 kg	155/90 kg
Wheat	160.7/90 kg	195/90 kg	211/90 kg
Rice-Basmeti	1.6/kg	2.7/kg	4.04/kg
-Sindano	1.2/kg	2.0/kg	2.66/kg
Suger Cane	150/ton	170/ton	164/ton
Cotton	3.6/kg lint	3.8/kg lint	3.74/kg lint
Pyrethrum (equivalent)	1,150/kg	1,150/kg	1,200/kg

\$1.00 = 10.45 Kenya shillings (Ksh)

THE IMPACT OF DEVELOPMENT ASSISTANCE

Because of its record of economic growth since independence, Kenya has remained very popular among bilateral and multilateral donors. Between 1976 and 1980, Kenya received from external donors \$2.5 billion in grant and loan commitments. The donors provided most of this assistance in the form of project aid, through line ministries of the central government. Overall economic performance has been uneven during the past five years, and many of these externally funded projects have mixed records of accomplishment. In addition to the structural problems of the Kenyan economy, the prevailing pattern of project assistance has several serious drawbacks.

Perhaps the most striking weakness is the proliferation of externally financed projects. The Development Estimates for the Year 1981/82 list 294 donor-assisted projects. Of these, 41 are

lodged in the Ministry of Agriculture, 24 in the Ministry of Livestock Development, 20 in the Ministry of Cooperative Development, 26 in the Ministry of Water Development, 27 in the Ministry of Health, and 39 in the Ministry of Transport and Communications. All of these ministries have prime responsibility for rural development activities. Their need for external resources is not in question, yet their programs appear to have been fragmented by the creation of multiple projects to accommodate aid from numerous outside sources.

The large number of development projects approved or already under way reflects donor preferences for separate project identities. This practice is better suited to the early stages of project assistance (identification, design, and approval) than to the realities of project implementation. The large and growing number of projects places heavy administrative and managerial demands on the GOK. Trained manpower is in short supply, and many Kenyans with technical qualifications have been assigned to duties of liaison with donors or to jobs involving project preparation or administration, rather than to field positions where they can apply their specific skills. Many officials serving in the districts recognize this problem. The district plans for all four districts covered in this study comment on the scarcity of trained field personnel; by comparison, the central ministry bureaucracies appear to be very well staffed. The retention of qualified personnel at the headquarters level, however, is an understandable response to the prevailing pattern of donor contact with the GOK.

Serious problems also exist in coordinating the activities of discrete projects in different line ministries. The number of ministries within the GOK has almost doubled since independence: at present there are 25, not counting the President's Office, the Department of Cabinet Affairs, and the Judicial Department. Many of the projects aimed at improving rural productivity, raising incomes, and generating employment have an integrated, multi-sectoral approach. During the project design process, coordin-

ation requirements are rarely spelled out in detail, and potential problems are not always anticipated. Because budgets, lines of reporting and authority, and functional specialities are all ministry-specific, incentives for coordination tend to be weak or nonexistent.

One of the best known cases in which coordination fell far short of expectations was the Special Rural Development Program (SRDP) of the early 1970s. The SRDP was a pilot program, carried out at subdistrict (divisional) level, that was meant to combine interventions by several line ministries. At the national level, however, there was little direct regular communication among the ministries involved. At the district and divisional levels, representatives of each ministry retained control over their respective budget, and neither the designated area coordinator nor the interministerial coordinating committee for the SRDP area had any discretionary authority over the implementation plan.

Table 4. Kenya: Medium- and Long-Term Public Loan Commitments and Disbursements

	(in millions of U.S. \$)				
	1976	1977	1978	1979 Prelim.	1980 Est.
Commitments	210.6	356.7	537.1	566.2	562.0
Disbursements	87.2	80.7	181.0	193.9	351.1
Pipeline Buildup	123.4	399.4	755.5	1,127.8	1,338.7

Source: World Bank, Kenya Country Economic Memorandum and Annex on Agricultural Issues, June 12, 1981.

A key indicator of the strain placed on the GOK's implementation capacity by proliferation of projects is the large buildup in the "pipeline" of committed but undisbursed funds. As Table 4 shows, the pipeline grew from \$123.4 million in 1976 to over \$1.3 billion in 1980. Although commitments during this period kept pace with most estimates of Kenya's need for external financing,

the slow rate of disbursements suggests that many of the projects approved in the period were not efficient vehicles for delivering assistance to targeted areas and groups.

Experience with the Integrated Agricultural Development Project (IADP) in its first and subsequent phases reflects these problems. The purpose of this project was to develop small-holder agriculture through the provision of inputs, the strengthening of extension services, and the promotion of decentralized planning at the district level. The IADP strategy was meant to be based on a "whole farm" systems approach, on a strong element of farmer participation, and on the active involvement of cooperative societies to deliver project services. Yet at both the district level and in the aggregate, the IADP was seen as having failed to achieve its objectives. Farmer participation was a fraction of original estimates. The credit program was plagued by a high dropout rate and by high rates of delinquency and default on loans actually made. The project was very ambitious in scope, but many of the assumptions made in the design process (for example, regarding the existence of technological packages acceptable to farmers or the capacity of cooperative societies to carry out assigned tasks) were faulty or overly optimistic.

Despite the formal commitment to decentralized planning, the IADP has been a centralized and relatively inflexible operation. Surprisingly, despite its well-documented implementation problems and the continuing buildup of undisbursed funds, it has not been substantially redesigned as it has moved through its successive phases. Its impact on small-holder agriculture in western Kenya, where the project represents the major initiative of the MOA since the mid-1970s, has been negligible.

DECENTRALIZATION INITIATIVES

Since independence, Kenya has attempted to decentralize its development program planning and management in a variety of ways. These efforts have been ably reviewed by Oyugi, Chambers, and Delp, among others.[1]

District Authorities

Discussions in the field indicate areas of both strength and weakness in the current system of involving district level personnel in the planning and administration of development efforts.

The Ministry of Economic Planning and Development currently assigns one person to each district administration to serve as the district development officer (DDO). The DDO serves as the secretary of the district development committee (DDC) and as the warrant officer for the Rural Development Fund. The DDO is able to coordinate the activities of line ministry personnel and can cut through certain bureaucratic constraints and otherwise expedite development efforts in the district.

The DDCs meet periodically under the leadership of the district commissioners to debate local development needs and criticize and expedite line ministry programs. Members of Parliament and other politicians often participate in these meetings along with district level civil servants to put forth projects that are important at the local level and to 'correct' bureaucratic behavior that is viewed as being insensitive to the needs of local communities.

The DDCs are responsible for the allocation of the locally controlled Rural Development Funds. Although the amounts of money are small their allocation makes the meetings more than an academic or political discussion of local issues. Real resources are at stake, and priorities must be determined. The process of selecting from among the many potential projects in a district is coordinated by the DDO, who reviews all proposals on the basis of their economic, technical, and political feasibility before suggesting a priority listing to the DDC.

Given the DDOs' lack of influence over the implementation of ministry programs, it is particularly important that they be able to influence the initial design of the proposals. It is, therefore, encouraging that a major attempt was made to involve district level officers in the formulation of the last development plan. As part of the planning process, each district team developed a district development plan. The plans we saw for the four districts were quite impressive.

Virtually all of the DDOs with whom we spoke had in fact found this exercise a valuable one. Yet all had questioned how meaningful their work had been. They doubted that their efforts had in fact influenced the content of the national development plan and the programs of the central ministries. In particular, they were convinced that because their planning efforts had not in fact taken place prior to the formulation of the national plan they had had little impact upon the content of the plan.

Thus the basic difficulty with planning at the district level is that the districts lack control over resources and over those who do control them--that is, the line ministries. Furthermore, district-level officials have little influence over either the planning of ministerial allocations or their implementation. Although these officials have engaged in planning exercises, their efforts have taken place at a point in the planning cycle that guarantees that they will have little influence over the contents of the plan:

In view of...the foregoing analysis one can say that what Kenya has been trying to do in the field of rural development can most appropriately be referred to as partial deconcentration. As long as the political system is not decentralized, that will inevitably continue to be the case.[2]

Lake Basin Development Authority

In December 1978, President Daniel Arap Moi announced the formation of the Lake Basin Development Authority (LBDA). In August 1979, Parliament passed the Lake Basin Development Authority Act, thereby officially creating the agency. Over the next year the government appointed its directors, recruited the agency's top management and professional staff, and funded the acquisition of office space and equipment in the town of Kisumu.

The LBDA is just now becoming a force in the region's development. As an official public body, it has passed through its first full budgetary year. It has only a few employees in residence, a small budget of Ksh 420,000, and is recruiting its operational personnel. It has yet to undertake its principal objective--the design of an integrated regional plan--or to implement a major program of development projects, although it is currently identifying funding for several important local initiatives. Although the LBDA is young, certain trends are clear.

First, within the western region the agency possesses political power. For over a decade, the western region has been politically isolated and underserved in terms of development projects and public sector allocations. More than any other event, the founding of the LBDA represents the commitment of the central government to increasing its attention and resources to this region in a special effort to help the area catch up with other, previously more favored, parts of the country.

Second, the LBDA has recruited a small professional staff of highly motivated and technically competent individuals who are committed to promoting the rapid development of the region. Third, despite its relative youth, the LBDA has skillfully become part of the political and institutional life of the western

region. Its members attend local seminars, leadership conferences, and political meetings. They take part in meetings of the DDCs. They seek to identify, support, and facilitate the realization of projects to which people are deeply committed. We were very impressed with the depth of local level involvement already achieved by the LBDA and the extent to which this involvement was evident in every district which we visited.

Fourth, by law the LBDA is required to develop an integrated regional plan for the Basin and its catchment area; this role will involve the agency's coordinating and rendering consistent the planning and development activities of districts in three provinces: Nyanza, Western, and Rift Valley. Because of its regional focus, the LBDA is in a position to see the full interrelationships among development projects and programs. It is in a better position than are local district level personnel to coordinate and establish priorities for certain types of project proposals.

As a center within the western region, the LBDA can provide a focal point for consultation and negotiations with donor agencies. Its efforts in this respect are likely to be beneficial. Its predilection for working with locally initiated efforts suggests that the agency is likely to direct external assistance to items that are of high local priority and that are relevant to local needs. Furthermore, because of the technical sophistication and professional skills of its technical staff, the LBDA can evaluate, screen, and suggest needed modifications for externally initiated project proposals.

Some are concerned that as this agency accrues resources it may become a top-down, coercive planning agency. The LBDA, for example, holds potentially extraordinary powers over water resources in the area. If it is designated an authority under the terms of the Water Act, the agency will hold powers of eminent domain, expropriation, and taxation over lands and properties that

in any way impinge upon water resources.[3] Should it choose to use these powers, the LBDA could become an extremely formidable force in the region.

FOOTNOTES

- 1 An overview is contained in W. Ouma Oyugi, "The Administration of Rural Development in a Kenyan sub-District: A Study of the Interaction Between Technical Assistance Personnel and the Kenyan Bureaucracy," Ph.D. dissertation, University of Nairobi, 1975, and W. Ouma Oyugi, "Decentralization for Integrated Rural Development: Some Lessons from Kenya," IDS Working Paper No. 255, December 1975. See also Peter Delp, "District Planning in Kenya," Development Discussion Paper No. 95, Harvard Institute for International Development, May 1980, and Robert Chambers, "Planning for Rural Areas in East Africa: Experience and Prescriptions," IDS Discussion Paper No. 119, November 1971.
- 2 W. Ouma Oyugi, "Decentralization for Integrated Rural Development: Some Lessons from Kenya," IDS Working Paper No. 255, December 1975, p. 19.
- 3 See in particular the powers outlined under Sections 19 and 27 of the Water Act.

CHAPTER FOUR
AGRICULTURAL SECTOR ASSESSMENT

INTRODUCTION

Agroclimatic zones are a fair indicator of productive potential in western Kenya, but the zones are not contiguous with district boundaries. While there are important differences in what can be grown in each zone, the entire region has good agricultural potential when compared with other areas of Kenya or other parts of Africa. The soils in western Kenya vary considerably, but nearly all have good economic potential for cultivation, pasture, or agroforestry. The region has a variable rainfall pattern, but much of it is very good in terms of amount, seasonal distribution, and reliability when compared with the semi-arid and arid regions of Kenya and other parts of Africa. Agroclimatic zones extensively overlap the district boundaries, so that large areas of Kakamega and Busia, for example, have comparable productive potential and current agricultural practices. The same is true of the middle zones of Kisii and South Nyanza.

Although the differences among the districts are significant, their similarities are equally important. Thus, the basic strategies needed for upgrading agriculture should strongly resemble one another. Obviously, many of the crops and farm systems for the various agroecological zones are now different and will be different in any future development program. Individual projects and activities will be tailored to the requirements and capabilities of specific localities.

The developmental needs of the four districts--and of the entire lake basin--bear elements in common, however, and call for a regional strategy. The four districts included in this study comprise a substantial part of the Lake Victoria Basin watershed and are representative of the entire region.

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In the limited time available for studying agriculture in these districts, the team members could not analyze in detail several interesting subjects. We would like to have studied in more detail for instance the major cash and export crops to examine the returns generated by them and the potential for expansion of small-holder production. The sugar industry has assumed a key place in western Kenya; there are important agricultural, economic, and social issues associated with small-holder sugarcane production that we were not able to address. We did not have time to do justice to these subjects and still perform our primary assignment, which was a general one. Similarly, we were unable to examine the commercial forest or fishing industries in detail, and we were limited to the general observation that important resource conservation issues must be addressed and that economic potential exists in both industries.

In examining agricultural activities the team took the perspective of the small farmer: what are his resources, his constraints, and his opportunities? What is preventing him from producing more and raising his income? Agriculture is always a complex system, and this is no less true in western Kenya than elsewhere. It is a combination of biological, economic, and human factors interacting within a broader social, political, and cultural framework. Agricultural development occurs slowly at best and is the result of a combination of various actions and reactions occurring in the system. Rarely does a single factor alone constrain increased productivity, and rarely does a single development initiative move development ahead very far. We therefore took a very broad overview in making our sectoral assessment.

LAND USE AND PRODUCTION PRACTICES

Current Land Use Patterns

The better soils and rainfall in the Kisii and Kakamega allow families to subsist on smaller parcels of land. The actual amount of land cultivated each year appears to be more a function of labor availability than a shortage of land itself. Even in Kisii, the most densely populated and intensively farmed district, we observed substantial areas of weed fallow. Apparently, prevailing production practices do not provide a high enough return to labor to encourage increased planting and full utilization of the land. In most areas intensive cropping technologies are not being used, and the yield per unit of land is low. The crop husbandry practices employed on the high value cash crops is clearly better.

All four districts are basically composed of small single family farms. Kakamega has a small percentage of large farms, and South Nyanza and Busia have a few ranches that support livestock. The vast majority of farmers (probably over 95 percent) are essentially subsistence farmers. An estimated 25 percent devote a portion of their land to a reliable cash crop from which they earn some part of their income, often a small percentage. Kisii has the highest percentage--55 percent--of cash crop farmers, and Kakamega has about 30 percent. Busia and South Nyanza have relatively small numbers of farmers--5-10 percent--growing cash crops.

Farmers produce first for their own consumption, 40-60 percent of their diet in all districts. They then attempt to produce a surplus of basic food crops for the local markets or to sell to traders for transport to urban markets. The balance of family consumption is purchased, sometimes through barter, from neighbors or in local markets.

Women tend to produce the basic food crops, and men look after the major cash crops. In those areas where major cash crops cannot be grown, the men rely on other local employment for at least part of their income or they go to urban areas in search of jobs. Farming is not considered a particularly profitable enterprise in these districts.

Maize and sorghum millet are the staple food crops, and cassava is produced in some areas. Beans are also grown extensively, often intercropped with maize. Vegetables, bananas, papaya, and other fruits are grown for home consumption along with a few head of livestock: cattle, sheep, goats, and chickens.

The majority of farms do not have a cash crop that will provide a reasonable family income. In Kakamega and South Nyanza small farmers grow sugar for the factories in those districts. Cotton and tobacco are important crops in the lower zones of Busia and South Nyanza. A number of farmers in South Nyanza produce sisal in small plots. Farmers in all four districts sporadically produce small plots of sunflowers and groundnuts. The absence of a reliable market, with the exception of the northern part of Kakamega, and fluctuating prices are disincentives to increased oilseed production. Rice is produced in pilot irrigation schemes, but upland rice is not widely grown. The Lake Basin Authority is currently trying to introduce upland rice production to parts of Busia and South Nyanza.

Kisii and Kakamega, with significant areas in the highlands and upper midland zones, are able to produce tea, pyrethrum, and coffee--all fairly good income earners. Dairying, especially in Kisii, is also a profitable farm enterprise. It is limited elsewhere because of the long distance to milk processing plants.

Farmers employ hand tools as their main method of cultivation. Perhaps 25 percent use animal drawn plows and another 5 percent use tractor hire schemes. Except on the major cash crops, the farmers use very little fertilizer or pesticides. Seed of improved varieties is available for some crops but not widely used.

Hybrid maize seed is available for the upper midland zones, and some good composite varieties are available. Many farmers attempt to replant hybrid seed, and hybrids are commonly mixed in the field with composites and local varieties. There are no varieties for the lower zones so the farmers try to grow the upper zone varieties. Improper plant spacing, in particular densities well below recommended levels, was observed in most areas.

Weeding is poor to fair, and "striga" weed is a major problem near the lake. Early planting is an extremely important factor affecting yields, yet late planting is very common. To reduce the risk and make cultivation easier, farmers usually wait until the first rains to begin land preparation and planting.

Intensification techniques are not widely practiced. Occasionally some farmers intercrop their maize with beans. Various intercropping, relay cropping, and rotation cropping are possible; they would greatly increase land productivity and return to labor. The promotion of intensive production practices is absolutely necessary if the region is to absorb any significant part of the labor population that will enter the labor market over the next 20 years.

Livestock production is not well advanced in most areas. Kisii and Kakamega have made a fair start in upgrading their cattle by crossing European dairy breeds with local zebu. Busia and South Nyanza, however, are still in the very early stages of herd improvement.

Most livestock graze on the natural forage available on uncultivated lands or fallow fields. The farmers feed the livestock some crop residues. Improved fodder and forage grasses have been introduced and are used by a few progressive farmers with grade milk cows. There is an extension service program to promote a "zero grazing" fodder crop system, but most farmers in the four districts have not adopted it.

Forage legumes, native or exotic, are almost nonexistent. This is extremely unfortunate because legumes could contribute significantly to livestock feed rations and, if properly inoculated with Rhizobium, to soil fertility in pastures as well. Legumes could also be grown in rotation with food crops. The larger grazing fields, particularly in Busia and South Nyanza, show significant signs of overgrazing. There are very few areas where improved pastures have been introduced or where good pasture management is practiced. This is a practice of tremendous potential in all four districts, but particularly in Busia and South Nyanza where considerably more grazing land is available. With good management, breed improvement, and better disease control, the area could develop a viable dairy industry.

Potential for Expanding the Land Base for Agriculture

The arable land of the four districts is fully occupied, although much of it is not efficiently used. Particularly in Kisii and southern Kakamega, farmers cultivate nearly every acre that is suitable for annual crops, and they are planting increasingly in marginal soils on steep slopes, in rocky areas, and where topsoils are shallow and fragile. Given the pressures of population growth, the inclination of government planners is to invest in irrigation projects in the low rainfall areas and in drainage projects in the swampy areas around the lake and valley bottoms. The projected population growth of the region makes the

eventual development of irrigated areas and the reclamation of swamps inevitable. There seems to be no long-term plan, however, for either irrigation or drainage development.

Several pilot irrigation schemes operate in the Kano Plain and South Nyanza with reasonable success. Surveys and prefeasibility studies have been conducted on the river systems in the region, and substantial areas have been identified for future irrigation projects. The Kuja and Migori rivers in Kisii and South Nyanza and the three systems of Kakamega and Busia--Nzoia, Sio, and Malaba--all have considerable irrigation potential. The high cost of developing major irrigation schemes, however, dictates a conservative approach to allocating resources.

The generally low productivity of agricultural land suggests that at this time available funds would be more profitably spent in the near term on improving existing technologies and practices for rainfed production than on irrigation or drainage projects. Once productivity reaches a reasonably high level, investments in irrigation and drainage will have a better chance of generating an acceptable return on the basis of increased agricultural production. Until then, the efforts in irrigation should be confined to small-scale, labor-intensive self-help projects. Small-scale irrigation schemes are feasible in areas throughout the four districts. The team members visited one such project at Chekalini in Kakamega. There Partnership for Productivity, a local private voluntary organization, is assisting a group of farmers on a settlement scheme to install a hydram system to irrigate vegetables in the dry season to sell in local and regional markets. We also observed a number of locations where small diversion systems appeared feasible.

The feasibility of developing irrigation on the river system is closely linked to the necessity for flood control measures and hydroelectric power generation. The return on investment must, of

course, be calculated on the benefits of all three aspects. Flooding is a major problem in the Nzoia system. Western Kenya may therefore have considerable potential in the area of hydroelectric generation. Technologies for small hydroelectric systems have advanced considerably in recent years, making them much more appropriate for use in developing countries.

A major feasibility study has been done on the Yala Swamp, indicating significant possibilities for flood control, land reclamation, up-system irrigation, and power generation. This is a major long-term project that has good potential if an effective demand for power can be demonstrated and agricultural productivity can be significantly increased.

The small, valley bottom drainage project under way in Kisii is intended to open up additional areas for crop production. The economic impact of this type of project has not yet been established. The current value of a hectare of farm land is considerably below the cost of reclamation, suggesting a very long-term payoff. Given opportunity costs for other investments in agricultural development, particularly in light of the inefficient use of farm land, one has to question the allocation of resources for this purpose.

Valley bottom swamps serve an important natural buffer and storage function in the watershed. Water is accumulated during rains and slowly released into the streams, slowing the runoff rate and providing a more regular water supply downstream. Attempts are being made to implement drainage projects with minimum detrimental effects, but it is not clear that even the most careful approach to drainage can avoid doing serious damage to the watershed system.

In summary, although some marginal opportunities exist for expanding the land base in the four districts, the main objective of the agricultural development strategy ought to be improving the productivity of existing farm land, consistent with the protection and maintenance of the natural resource base.

Protection of Natural Resource Base

The high population density in western Kenya creates a serious problem of degradation of the natural vegetation, soils, and water catchment system. Except in protected reserves, the virgin timber has been commercially harvested. Logging continues on regrowth and reforested lands. Small forest areas exist throughout the farming areas of all districts. Most of the arable land is cultivated or used for livestock grazing. Many steep slopes are cultivated, particularly in Kisii. Fortunately, a high percentage of the soils are deep, and the ability of natural vegetation to regenerate is high. Otherwise soil erosion would be much more serious than it is.

There is a long-standing tradition of tree planting that is being strongly encouraged and supported by the GOK. Eucalyptus, cypress, and other exotic species are planted along roads and property boundaries and on steep, otherwise uncultivable, areas.

Much of the cultivation is done across the slope, and grass and tree strips are evident in some of the hilly areas. Contouring, however, is not generally practiced. Extensive cultivation increases the runoff rate, creating serious pressure on the watercourses. The MOA is installing some spreaders and other structures to control gully erosion in the most serious problem areas, but it remains a serious problem that the MOA does not have adequate resources to overcome.

Fuel wood demand is high and increasing, creating a serious problem of overcutting in wooded areas. It is more serious in the lower zones where fewer wooded areas exist. Charcoal production takes place in certain areas, but most households use wood. Fuel efficient stoves have been introduced, but very few are in active use. The demand for fuel wood for tobacco drying has caused over-harvesting of trees in the tobacco-growing areas, but the tobacco company (BAT) is attempting to correct the problem with a tree-planting program and claims that at present it is planting more trees than it is cutting. BAT is trying to use this program to introduce agroforestry to tobacco farmers.

The grazing lands in all four districts show serious signs of overstocking. The lowest rainfall zones of Busia and South Nyanza are, predictably, in the worst condition. Overgrazing is leading to soil degradation; the spread of rank, noxious, and inedible plant species; and the general loss of a valuable productive resource.

The rainfall and soils in all areas are capable of producing pastures of high quality and in the upper zones, very high quality. Good pasture management using appropriate species would not only increase livestock production significantly but also protect and improve the soils. The lack of permanent improved pastures and the infrequent use of forage crops in rotation systems are serious deficiencies in the agricultural systems of the region. Research work is sufficiently advanced to initiate a program to promote pasture development and fodder/forage cropping.

The GOK forestry program is operating under the same resource constraints as all other programs and is unable to meet these needs. Government tree nurseries operate in most areas, and demand for seedlings is high. There is considerable scope for a program to encourage and assist the establishment of private sector seedling production at the division or location level.

The fast-growing leguminous species such as Leucaena are not being promoted. Leucaena, the acacias, and other species could do very well in this region. Leucaena can be planted on contour strips for stabilization in soil conservation programs; the pods and leaves are excellent high protein livestock feed; and the wood can be used for fuel and construction purposes. It can be planted on property lines as living fence posts that can be harvested periodically at fence post height. Being a legume, it fixes nitrogen in the soil; and the leaves, when incorporated in the soil, contribute to increasing fertility.

Leucaena is an excellent insurance crop in zones subject to seasonal drought, because its deep rooting system allows it to produce vegetation for livestock feed when pastures are depleted. The shrub species of Leucaena are also quite suitable in the lower rainfall zones for livestock feed, because of their deep root systems and general heartiness. It has excellent nutritional value, equivalent to alfalfa. Experimental work has been done by Kenyan researchers with good results. Leucaena and other fast growing leguminous trees and shrubs should now be promoted aggressively in the region.

The Ministries of Agriculture, Livestock Development, and Natural Resources all have conservation components in their programs. While they share a concern for preservation of the resource base, financial constraints prevent soil conservation, reforestation, and agroforestry from becoming extensively developed. The recurrent cost constraints on the national budget and sound ecological principles both suggest a policy aimed at increasing the involvement of small farmers directly in soil conservation and tree planting.

Management practices that increase water absorption on cultivated fields and control runoff have economic as well as long-term conservation benefits. Tree planting of high return

species and contour or strip cropping have a strong financial return potential to provide the incentive for farmers to practice them. Fruit and nut trees can also be used. This type of program requires an integrated agricultural research, extension, and training system for successful promotion.

Soil conservation and tree planting must be viewed by farmers as beneficial and natural aspects of their individual farm management systems, and they must be willing to work in concert with their neighbors on certain aspects. The GOK cannot afford extensive independent programs or subsidies to individual farmers. Its role should be to promote, educate, and train farmers in soil conservation, grazing land management, and agroforestry as a fully incorporated component in a total research and extension effort.

ANALYSIS OF CONSTRAINTS TO AGRICULTURAL PRODUCTION

Introduction

In considering the range of factors that either promote or constrain agricultural production, six main categories can be identified:

- Quality of the soil;
- Topography;
- Climate;
- Management and labor;
- Availability of appropriate technologies; and
- Agricultural services.

Within western Kenya, the last three factors on this list tend to constrain production, whereas the first three are generally favorable.

In the four districts, soil is not a major constraint on production. Most of the soils have good agricultural potential. There are some problem soils, but with adequate management they can all produce good crops. Kisii and Kakamega in particular have a high percentage of deep, well-drained clay loams.

Topography is a problem in some localized areas, mainly in Kisii and Kakamega. Where slopes are steep, rock outcrops present a serious deterrent to cultivation. Steepness makes the fields more difficult to cultivate and causes serious erosion problems. Good management is required, but with proper techniques topography alone is not a major constraint.

As already noted, climatic conditions throughout most of the region are favorable to agriculture in normal years.

Farm management, however, is a major constraint in all four districts. The major cash crops grown in Kisii and to a lesser extent in Kakamega show fairly good management practices. The management practices on the subsistence food crops are generally poor, although tending to be much better on those farms that also have productive cash crops.

There are many reasons for the low level of management, such as the extension service does not reach the farmer, the technology is weak, and the returns to the farmer are too low to make the effort worthwhile. Farmers lack sufficient training, but they also lack access to optimal technologies and services, subjects discussed below.

Most farmers depend on their families to satisfy the labor requirements of the farm. Only those farmers producing crops for sale can afford to hire seasonal labor on a regular basis. Since most cultivation is done with hand tools and mechanization is used

on only a small percentage of farms, the amount of land that can be farmed by a family is fairly small. Major bottlenecks occur at planting and harvest time when the family is unable to do all the work required in a short time.

Appropriate technologies are a major constraint to agricultural production, and are dealt with in some detail below. The research and extension system is responsible for developing technologies and transferring them to farmers. There are major weaknesses in this system.

Agricultural services are another major constraint to increasing agricultural production. Input supply, credit, and marketing all have serious problems, which are discussed in subsequent parts of this section.

Research, Extension, and Training

The Provincial Research Station for Western Province is in Kakamega, with a substation located in Busia. The Nyanza Provincial Research Station is in Kisii, and South Nyanza has a substation. The trials they conduct are generally designed at the national research stations in other parts of the country. Provincial stations rarely design their own research projects. Rather, as assigned by national stations, they do trials of varietal screening, fertilizer (rate of application), spacing, time of planting, pesticide treatment, and intercropping. None of the stations the team visited has a farming systems research program, although Kisii is studying the economic analysis of production systems.

The gap between research and extension has not yet been bridged, despite efforts to do so. The extension agents receive only a minimal amount of exposure to the technical work of the research stations. Occasionally, there is a field day where agents and farmers together are invited to view the work at the

stations. There are no regular training programs for field agents. Extension staff conduct very few field demonstrations. Most of the junior employees, the ones directly contacting the farmers, lack sufficient agricultural training to do proper demonstrations or training of farmers.

Research is not focused on the specific varietal requirements or management systems required for each agroecological zone in the four districts. The MOA policy on research is to increase the work on subjects that will provide small farmers with production practices whose combined effect on the total farm system will increase incomes. While such efforts are under way in other regions, they have not yet started in western Kenya.

The small farmers of this region are producing on smaller and smaller land areas. They need to learn technologies and methods that will let them farm more intensively and use all of their resources more productively. They must learn to produce higher yields of individual crops and higher total output for the farm. Although the farms are very small, there is a considerable amount of weed fallow, even in Kisii where farming is most intense and productive.

On farms of two hectares and smaller, every square foot should be planted in an integrated system of perennials, annual crops, and forage crops. Dense plant populations, intercropping, relay cropping, animal manuring, green manuring, and other intensive practices should be researched, taught to extension agents, and transferred to farmers. Extension agents do not make effective use of lead farmers or group extension possibilities. Farmer training centers are considerably underutilized, and follow-up training by extension agents is minimal.

Livestock, veterinary, fish culture, forestry, soil conservation, and crop extension services all operate in separate and independent ways. Experience elsewhere suggests that close

coordination or integration of these services in managing research, extension, and farmer training programs is more effective. The interaction of the various disciplines produces better technological practices, and the delivery of extension services to farmers is more cost-effective. The integration of soil conservation, tree planting, livestock raising, and fishpond culture in a total farm system is the logical next step in technological development.

The agricultural research program of Kenya is well advanced in many subjects. It is now at the stage where farming systems work at the zone level can produce useful advances.

Soils Management

Advances in crop production, beyond first generation gains from selecting suitable varieties and applying basic agronomic practices, begin with a good understanding of the soil being used and managing it properly for the purposes intended. This includes managing the chemical and physical properties of the soil to prevent erosion and other degradation. The soils of western Kenya are of varied types, with several different basic geological origins. Their physical and chemical properties vary widely. Most of these soils are of good agricultural quality: they are deep and well drained, with manageable structures and textures (for example, the vertisols can be tough), and many have good natural fertility and topsoil humus. But each should be handled a little differently.

The chemistry will vary, pH can differ widely, and mineral deficiencies and toxicities can occur in many ways that affect crop performance. Neither farmer nor research extension workers know enough about these soils. The soils mapping and land classification work now under way is an important undertaking and

lays the basis for future soils management work. At present, almost no soils research that relates characteristics of specific soils to the crop management practices in different agroecological zones is being done.

Many of the soils in the four districts are acidic and become more so under continuous cultivation. When this occurs, the "availability" of many essential nutrients to the plant declines. In addition, certain minerals, like aluminum, become more "available" to the point of toxicity. The most elemental practice of good soil management is to try to keep pH between 6.0 and 7.5 to make soil nutrients available to the crop. A soil with low pH requires higher rates of fertilizer application to obtain the same response from the crop as could be achieved with a proper pH. It is therefore not surprising that many farmers report insignificant response to the recommended fertilizer applications.

Lime application is the most common and usually the least expensive method of correcting low pH. Practically no lime is used by farmers in the region now, even though it is readily available at reasonable prices from the Homa Lime Company in Muhoroni, where lime is used on sugarcane fields with positive results.

Given current fertilizer prices, researchers and extension agents should be confident of the kind of results an individual farmer will obtain before recommending the use of chemical fertilizers. General application rates, based on research done at a distant station on a different type of soil, without an economic return analysis, are no longer sufficient.

Livestock Diseases

Livestock diseases are an important constraint to increasing dairy and meat productivity. Animal health programs are functioning in the districts, but two cattle diseases deserve

particular attention. East Coast Fever (ECF)--Theileriasis--is the major disease in the region and is prevalent in all four districts. ECF is caused by a protozoal parasite that ticks transmit to the host animal, where the parasite infects the lymph tissue.

Adult native zebu cattle in areas where ECF has existed for a long time have acquired a natural immunity through nonfatal levels of exposure. Generally healthy animals can maintain this immunity if subjected to periodic low-level reinfection. If not reinfected, they lose their immunity and become susceptible once again. Non-zebu cattle apparently are not able to develop a natural immunity through low-level, periodic exposure. There are no injectable vaccines or practical clinical treatments for ECF.

Control of the disease, must be accomplished by controlling the vector tick. Apparently the disease has been eradicated in southern Africa by eliminating the vector. The most common method of control is by applying acaricides to animals, usually in dip tanks, to kill the ticks. If, however, the dipping is not done properly and consistently, at proper intervals, it can increase the problem rather than solve it. Animals that have been dipped for a period of about six months have lost their natural immunity. If the dipping is then stopped, interrupted, or done with a weak acaricide, the animals will probably be reinfected, often with lethal results.

The Ministry of Livestock Development has a cattle dipping program in each district. In some locations the program was reported to be working quite well. In many locations, however, the dipping facilities were insufficient or not efficiently managed, the acaricide solution was too weak, or the farmers did not dip often enough. Many farmers apparently have lost confidence in the dipping program because their animals have become reinfected and died.

Dairy and meat animal production have good economic potential for small farmers in the four districts, but endemic diseases must be better controlled if livestock development is to occur. A well-planned and managed investment in the dipping program would have a high return.

Trypanosomiasis is another important disease of this region, particularly near the lake in the areas of South Nyanza and Busia. Trypanosomiasis is a group of diseases caused by a protozoan infection transmitted by biting insects, most important, the Glossina, or tsetse, fly. Trypanosomiasis infects a wide range of animals and humans (sleeping sickness). Apparently, the disease in western Kenya is limited to cattle.

Prevalence of the disease runs in cycles and when not under constant control can reach epidemic proportions quickly. The fly can be controlled by spraying insecticide, clearing brush, and biologically releasing sterile males. There are prophylactic drug controls and drug therapies for infected animals. All of these measures are needed in a comprehensive program to control Trypanosomiasis. The Ministry of Livestock Development attempts to deal with the problem, but resources and trained personnel are not as yet sufficient.

The economic viability of a livestock industry in areas where the tsetse fly is prevalent depends on the effective control of the fly. The effort in Kenya could be significantly strengthened by closer cooperation with other African countries and international agencies. This would be a good subject for project assistance from an external donor. There are a number of other important livestock diseases in the area. The Veterinary Service is growing and improving. The vaccine program is achieving good results in many areas, but a great deal remains to be done.

Input Supply

The distribution system for farm inputs in Kenya is dominated by the distribution of fertilizer. Fertilizer constitutes 60 percent of Kenya's imported farm inputs by volume; by value, it constitutes 30 percent, making it the single largest item. Those agencies that distribute fertilizer also market pesticides, herbicides, and other chemicals.

A governmental committee allocates licenses to import fertilizer. On the basis of projections of farm acreage and prices, the committee forecasts demand. Adjusting for concessional grants of fertilizers by foreign donors, it then apportions quotas among fertilizer importers. The committee determines the allocations on the basis of requests by these firms and on past performance.

For large-scale users, the distribution network for fertilizers is straightforward. A few import directly, and some of the major buyers, such as plantations, simply contract for bulk shipments from private firms. One of the major importers, the Kenya Farmers Association (KFA), distributes through 40 district offices and a network of 3,000 stockists.

Fertilizer distribution to the small-scale farmer is handled primarily by the cooperative societies. In part, this is a matter of GOK policy. Credit programs and programs to promote new fertilizer-based technologies are usually administered locally by the cooperative societies or unions, so government programs for distributing farm inputs naturally center around them. But the role of the cooperatives is central, not only as a matter of government preference but also by default.

A major reason for the prominence of the cooperatives is the lack of incentive for private business to engage in fertilizer distribution. In 1975, 12 firms imported fertilizer; six of them

have since withdrawn from the market, while only three new firms have entered the market. The major reason is that the margin allowed by government pricing policy (3-5 percent) is unattractive by comparison with the returns possible from other economic activities, and in some areas is not even sufficient to cover transport costs.

The small margin allowed has not only weakened the distribution network by reducing the number of participants in it but it has also reduced its range and reliability. Thus distributors cannot absorb high transport costs and therefore do not distribute fertilizers long distances from their major stores.[1] Moreover, because the permissible margin lies below the rate of interest, district warehouses do not hold large inventories, nor do they hold inventories for long periods of time. The result is that, at periods of peak demand, farmers often find that fertilizer is out of stock and have to wait for deliveries. The yield response to fertilizer use is therefore lower than it should be because of the failure to make timely application.

Because of the importance of fertilizer in the farm input supply system, these limitations in fertilizer distribution affect the distribution of other inputs as well. As a result, the network for chemicals and other inputs is not as strong as it could be. Nonetheless, because larger margins are allowed for chemicals, seeds, and other products, these inputs are more effectively supplied.

Observations in western Kenya indicate that these supplies are often available in areas fertilizer fails to reach; they are supplied in ways that allow farmers to choose the product that best meets their needs;[2] and, in contrast to fertilizers, they are supplied in packaged units that are convenient for most farmers. Because the margins give incentives for firms to supply these inputs, competition among suppliers has emerged, with resultant benefits to consumers of these products.

As noted earlier, the cooperatives dominate the distribution of agricultural inputs to small-scale farmers. All the problems that affect the distribution system in general affect the cooperatives in particular, simply because they are part of the larger system. But the cooperatives have additional problems as well. One is their inability to stockpile inputs. Lacking liquidity, they cannot buy ahead in bulk; and lacking standing in commercial credit markets, they cannot borrow to do so. As a result the cooperative unions must await purchase orders for farm inputs from member societies, which in turn must have purchase orders from individual farmers. And the farmers first have to be approved by local credit officers and credit committees. Needless to say, the supplies often reach the farmer too late.

The Cooperative Bank is the financial agency for the cooperatives. When the cooperative unions request funds for farm inputs, they notify the Cooperative Bank to release the funds; it, in turn, requests a transfer of funds through the NCPMB. If the funds originate from a foreign donor--which is the case for a high proportion--the Cooperative Bank must request their release from the donor. After the release of the funds, the Cooperative Bank credits the union's account. The union then can purchase the required farm inputs. Normally, the process takes at least three months.

In general, the input supply system does not work as efficiently as it should to stimulate production. Fertilizer is the primary case in point, but it is clear that the further out on the distribution network one is, the less reliable and accessible are input supplies. Agricultural officials and farmers in all four districts reported that seed was often not available at planting times and pesticides were not available when needed. Government officials are aware of the problem and are working with the private sector and the cooperatives to improve the situation.

The system could be improved by reducing the bottlenecks mentioned earlier in the production credit approval procedures and putting more control and responsibility at the district level, where officials can respond in a timely way to farmers' needs. Generally, input supply seems to work more effectively when in the hands of the private sector, which has stronger incentives to deliver the goods efficiently.

Production Credit for Small-Scale Farms

Two problems with existing production credit schemes are the evaluation of potential borrowers and the monitoring of crop production and loan repayments. Small-holder credit schemes, naturally involve many borrowers. Without greatly increasing the number of loan officers or developing an exceptional level of cooperation from agricultural extension agents--many of whom are already overburdened by their other duties--the assessment of the credit-worthiness of loan applicants remains cursory. As a result, unqualified applicants secure loans, thus contributing to high rates of default.

Another problem is that, with large numbers of applicants and a small number of staff, small-holder loans are often slow in being processed. Even when they are not slow in being issued, they are often slow in being utilized because they are released not in the form of cash, but in such forms as purchase orders for farm inputs and services, tractor hire from the mechanization unit, and fertilizer from the KFA. In remote areas, the suppliers tend to await the arrival of such purchase orders prior to securing the needed stocks. Profit margins do not warrant the carrying of inventories by private distributors. Lacking liquidity or adequate credit themselves, the cooperatives also must wait for the arrival of purchase orders before stocking farm inputs. The consequence is that there are delays in provisioning the farmers, leading to delays in the performance of critical agricultural functions.

Adding to these delays is the fact that in more remote areas there are no KFA stores stocking farm inputs. While cooperatives theoretically stock inputs for their members, they tend not to carry inventories and they are unwilling to supply nonmembers. As a result, farmers must travel long distances to purchase inputs and arrange for their transport to their farms.

The consequences of these problems are late ploughing for farmers who have borrowed for mechanization services and late planting for almost all who are dependent on inputs (seed and fertilizer) from the credit program. Both factors result in lower yields than anticipated by the loan officer and reduce the farmer's ability to repay his loans.

Besides the rise of rural indebtedness and the loss of government funds, the deficiencies of the credit program lead to what may in fact be its most important negative consequence: the development of strong pressures to bureaucratize the marketing of farm products. The government wants its money back; it fears the impact on financial habits if it forgives loans and fails to apply legal sanctions to defaulters. To secure the repayment of debts owed to it, the government therefore seeks to control marketing of the crop. It requires that crops be marketed through publicly controlled channels, as this vehicle offers a means of securing loan repayments.

Government-subsidized credit programs for farmers thus tend to promote government controls over crop marketing. The credit programs create incentives for public authorities to resist the growth of private markets. Their long-term impact may thus be to forestall, rather than to promote, the rise of an economically vigorous private agriculture sector.

One appropriate response to these problems is to reassess whether the government's provision of farm credit is really the best way to bring small-scale farmers to higher levels of production. This method of credit delivery may in fact not be necessary. The farmers of West Africa, for example, produce a large percentage of the world's coffee, cocoa, palm oil, and groundnuts without borrowing from government sources. The Ugandan farmers are today supplying the Kenyan market with citrus and other fruits, despite the fact that they are unable to secure credit from their government. Farmers can and do save; they have access as well to loans from private sources, albeit at a cost greater than that charged by government. What is needed to mobilize this capital is an incentive to invest.

The best alternative to the present loan system may well be measures to enhance the profitability of farming. Increasing prices for farm products is one alternative. Recent increases in official prices for agricultural commodities to levels approaching world market parity represent a major positive step in this direction. Lowering the costs of marketing so that present consumer prices would translate into higher farm-gate prices is another. Alternatively, the GOK might benefit by taking resources out of the loan programs and reallocating them to farm input subsidies during the introduction period of new inputs, when the technology package and pricing structure is attractive. While often bedeviled by problems of their own, subsidy programs may put the farm inputs into the reach of small-scale farmers for the initial test period even in the absence of government loans.[3]

The GOK could also invest the money in technical assistance so that farmers learn how to use inputs more effectively. Subsidies to farmers could be provided by teaching them better technologies and supporting their new skills with attractively priced and readily available production inputs.

Marketing of Agriculture Output

The government plays a major role in the pricing and marketing of agricultural output in Kenya. Agricultural acts dating to the preindependence period provide the authority for government intervention. The basic objective of these acts is to guarantee prices and assure farmers of markets for their produce. Prices are set for maize, wheat, rice, milk, beef, sugarcane, cotton, and pyrethrum. Coffee and tea prices, however, fluctuate with international market trends. Statutory marketing boards exist for all major commodities.

The boards for coffee, tea, pyrethrum, and cotton promote crop development, supply inputs, provide farm extension services and credit, and conduct research, besides performing their basic function of export marketing. In addition to national boards, a number of parastatals and private cooperatives perform domestic marketing functions. Producer cooperatives provide the major channels for the processing and marketing of certain small-holder cash crops such as cotton, coffee, pyrethrum, and milk.

The marketing boards and parastatals generally provide reliable and reasonably effective marketing structures for the major export crops. Expansion of services to the more distant areas is needed in some cases, and efforts are under way to accomplish this expansion. The principle constraints to increased production of these crops are in international prices more than in marketing systems.

The cooperatives' performance in marketing their members produce is mixed. Some seem to be doing an excellent job; others have been disastrous. The problems with cooperatives--including weak management, lack of working capital, and corruption--are well known and well documented.[4] Cooperatives can be an effective marketing mechanism, by achieving collective market influence and economies of scale for small farmers in transport, basic process-

ing, and storage. With respect to the development of the four districts studied, the government will need to take strong measures to correct the deficiencies of small-holder cooperatives if they are to play an expanded role in crop marketing.

In most rural areas, village markets operate primarily to facilitate trade among local consumers. Local trade in cereals, fresh produce, meat, and milk is conducted at local market centers. These markets provide an opportunity for otherwise subsistence farmers to earn cash. Surplus produce not absorbed by village markets moves by traders to larger urban markets.

The NCPMB, which handles the major food crops produced by small holders, is of particular importance in the western region. NCPMB's functions include purchase, transport, storage and sales, maintenance of strategic reserves, and movement of produce from surplus to deficit regions.

The government-controlled prices of most agricultural commodities were increased, in some cases substantially, shortly after we completed our research in Kenya. While the impact of these increases on total production will not be felt definitively until after the next harvest season, they do reflect the GOK's seriousness in seeking to bring prices to world market parity levels and reduce the role of government in enforcing price and marketing controls on agricultural produce.

Most maize and other basic food crops marketed through local channels in the rural areas are not traded at these official prices now but follow seasonal supply and demand conditions. When supply is abundant producer prices are well below the official price, while during short supply periods prices in parallel markets are considerably above the NCPMB price. Parallel market prices of maize and beans--commodities under direct control of the NCPMB--fluctuate with supply conditions because of varied harvest times in different agroecological zones. Peak prices of maize

reported in December 1980 were Ksh 252 per bag, or twice the official NCPMB selling price. For the same period, beans were sold at Ksh 472, whereas the NCPMB price was Ksh 330.

The vast bulk of trade in food commodities takes place through these nonofficial markets in all areas of the country. This informal system is the most prevalent marketing channel for small holders. It generally serves the small holder well with cash payments and relatively easy access, at least for small quantities. Local traders tend to be competitive to the benefit of the producers. The official or formal system provides a guaranteed floor and, at least in principle, an assured if not always totally reliable market.

The small holders of the four districts studied are primarily subsistence farmers. From 10 to 15 percent grow an export crop--coffee, tea, and pyrethrum--for which a fairly reliable market exists. The rest are trying to grow surpluses of their staple crops--maize, sorghum, and bean--or to produce sugarcane, meat, milk, or other food crops for the cash market. In addition to the production constraints, the market is not sufficiently developed or reliable in most areas to encourage individuals to produce much beyond their own consumption requirements. Perishable crops are particularly vulnerable. Cotton, edible oilseeds, dairy, and meat offer the greatest potential for the subsistence farmers of the western region to become viable cash market producers. Sugar, dependent on factory installations, is the only other major possibility at this time. A number of minor crops could be produced on limited acreages. As discussed in the next chapter, the marketing systems for these crops should be developed in close coordination with the development of agroprocessing enterprises.

PROPOSED INITIATIVES

Introduction

A large number of potentially helpful development initiatives became apparent during the course of the study. Everything in the agricultural system needs improvement. Some aspects are in greater need than others, but it is difficult to set priorities for distinct project activities. We are aware of severe constraints on the GOK operating budget and the lack of realism in proposing projects that would make large incremental demands on the recurrent budget.

Without knowing the level of GOK and external resources that might be committed to the four subject districts over the next few years, it is useless to be too specific in setting out the specifications of an appropriate development program. A more practical and useful approach is, first, to suggest a general strategy of agricultural development for the four districts; second, to recommend policy and program changes that would enhance agricultural development without incurring major new recurrent costs; and third, to suggest some new project initiatives and establish priorities for them on the basis of their cost effectiveness.

The proposed initiatives may be considered in three categories: 1) developing technology that deals with the basic research, extension, and training programs; 2) promoting specific cash crops as income earners; and 3) strengthening agricultural services, including input supply, credit and marketing. We have attempted to maintain a balance between long-term and short-term needs and objectives.

The major long-term constraint to agricultural development is the population growth rate. Increasing the productivity of small farms and raising the incomes of farm families would be a much easier task if the districts were not faced with a doubling of population by the year 2000. Not only does that represent twice the number of people to feed on essentially the same amount of land, but it also puts extreme demands on available capital for investment in infrastructure: including roads, schools, and health facilities. How development will be financed over the next 20 years is a major issue we cannot address.

A General Strategy for Agriculture

The small, subsistence farmer character of all four districts suggests a general strategy with the following components:

- Improve the basic technologies being used so that farm families can produce more and better food for their own consumption, given their existing land, labor, and capital resources. This means more production per unit of land, of labor, and of capital invested;
- Improve the marketing system and market prices to create an effective demand for farmers to produce income-generating surpluses. The government is already beginning to move in this direction, but it is too early to see results;
- Expand the market for the basic cash crops (coffee, tea, pyrethrum, cotton, tobacco, and milk) produced in the four districts and increase the land area and number of farmers involved in their production, recognizing domestic and international market demand constraints; and
- Develop markets for other cash crops that have a high potential in the districts and introduce them to farmers not presently producing a cash crop.

Policy and Program Changes

Several policy and program changes would improve agricultural production without major capital investment or recurring costs. Producer prices for basic foods commodities have been consistently low as a matter of government policy. An improved price structure would provide added incentive for production.[5] The new producer prices announced by the government appear to be a major improvement that should have a significant effect on most crops. While government controls and regulations in the market are necessary and valuable, there are strong indications that allowing the private sector to operate more freely in the market would be more efficient.

The government should consider ways to encourage greater private sector involvement in marketing functions, particularly in storage, processing, and transport. This is consistent with current government policy as stated in the Food Policy Statement, which specifically encourages greater private sector involvement in the processing and marketing of dairy products. Other possible initiatives for private sector food processing are discussed elsewhere in this report. Policies that encourage private investment should be considered, particularly a private enterprise investment fund, as described in the rural enterprises section. Such a fund could be a major factor in stimulating increased agricultural production.

Proposed Initiatives in Technology Development

In all four districts the production practices of the small subsistence farmers are generally poor for the basic food crops. The technologies the farmers use on the major cash crops are usually better but also need improvement. The proposals in this section are primarily addressed to basic food crop production but apply to the cash crops, particularly in their role as part of the

individual farm system. The proposal for fodder and forage production relates to both basic food production and dairying as an income producing enterprise.

Farming Systems Research and Extension

The agricultural, livestock, and natural resources research and extension programs within the region should be reorganized, redirected, and, in some aspects, integrated. These changes can be made with existing facilities and personnel. The program should have the following features:

- A farming systems development program should be adopted. It should focus on the problems of individual small farmers and engage farmers themselves, along with the research and extension staff, in the process of problem identification and solution;
- The program should aim to increase the income of the whole farm unit, fully realizing the potential of the natural resources as well as the human resources of each farm family;
- Research should focus on identifying optimum systems of annual and perennial cropping, livestock husbandry, agroforestry, and fish pond culture for the full range of agroecological zones;
- Lead farmers should be selected in each sublocation to test systems and provide the site for teaching the system to other farmers. There should be two-way communications between the farmers and the research station, through the extension system;
- The agronomists as well as the livestock production, animal health, home economics, forestry, and fisheries agents should function as coordinated teams that develop systems in response to the natural and labor resources of the farm within the agroecological zone where the team is operating;
- The program should fully recognize the important role of women as farmers and farm decision makers. There should be many more women employees in the research and extension system;
- The plant breeding programs at Kitale and the other major experimental stations should expand their programs to breed varieties that are genetically suited to each agroecological zone and for small-farmer production;

- The role of the stations and substations in the region, as it is now, should be to screen and initially to test plant varieties and livestock to select those that meet the requirements of the farming system in each of the agroecological zones;
- The standard fertility trials being done now in the four districts should be expanded in a general soils management program, which is described in detail below; and
- The extension teams in each zone should maintain small demonstration/training farms where the agents share in the management and the work. The District Farmer Training Centers can be used as the main demonstration/training center, but there should be other farms around the district of an average size of about two hectares. Technical assistants should learn how to farm productively on these farms so they will be able to teach the farmers more effectively.

Most of what is proposed in this initiative can be accomplished without a major increase in capital expenditure or recurrent cost. This initiative requires more effective use of existing research stations and farmer training centers and of personnel. It requires more effective use of existing knowledge within the region and throughout the country. It also requires application of that knowledge in a systematic approach that engages the farmers in the learning process.

Soils Management, Research, Extension and Training Project

As described in the constraints section of this report, there is a great need for a comprehensive soils management project in the region that would be linked directly to the Farming Systems Research and Extension Program. This project probably would require a small amount of external technical assistance for advisers and training and some capital investment. Some of the technical expertise could be provided by Kenyan experts from the national soils laboratory if their time could be made available. A senior extension specialist and several junior agents in each district could be selected and retrained for soils work, without having to increase existing personnel levels. The soil and land-

use mapping work now being done by the MOA with the help of a West German assistance team is an excellent basis on which to build a soils management program.

Research is required on the wide variety of soils in the region, and management practices that would optimize yields under the various farming systems used in the different zones need to be developed. Western Kenya needs a soils laboratory, with field researchers to study soils and conduct controlled production trials with various soil management systems. Research is needed on pH, macronutrient deficiencies, and toxicities as well as on the effects of various management practices. Soils research should be integrated into existing agronomic research programs, and soil management included in the extension and training programs.

Livestock Forage and Fodder Crop Promotion

One of the most glaring deficiencies in the current agricultural technology of the four districts is in livestock feed production and pastures. A project that promotes pasture improvement as one component of the farming systems research and extension program is needed. Forage and fodder legumes are particularly needed as very few are currently produced by farmers and lack of protein limits livestock yields. The FAO pastures research project at Kitale has already done an excellent job of screening the grasses, legumes, and forage shrubs of the various Kenyan and exotic species. Various management systems need to be extensively field tested under different conditions and promoted through extension and training programs. A seed multiplication program is definitely required, and the Kenya Seed Company is the appropriate organization to carry it out.

Animal Traction and Farming

Cultivation of fields is a major constraint to small farmers. Tractors are too expensive for small subsistence farmers to buy and operate. Most farmers raise cattle; they all could have oxen or access to custom plowing by someone who does. A breeding program to produce dual purpose draft-milk animals is required. Harnesses, implements, and plowing techniques all need improvement and extension. The farmer training centers should increase their training on the use of draft animals. This would not be a particularly expensive project and could be done as one component of the farming systems research and extension effort.

Soil Conservation and Tree Production

A program to integrate soil conservation practices in the farming systems program is badly needed. Contouring, strip planting, tree planting, and water course structures should be introduced as part of the farming systems programs. Fast-growing trees (for example Leucaena), should be introduced. Private nurseries could be developed and supported with technical assistance. Training programs for extension agents and farmers should be developed on a fairly wide scale. Again, we would propose using mostly existing personnel to operate this program.

Proposed Initiatives in Cash Crops

Approximately 85 percent of the farmers in the four districts do not have a dependable cash crop from which they can earn a reasonable income. Many rely on cash sales of small quantities of surplus produce of their basic food crops. Their economic situation could be significantly improved if they had one or more crops for which there was a consistent demand at a good price. Practically every crop grown in the world can be grown somewhere within the four districts. Kisii and Kakamega do reasonably well

already with coffee, tea, and pyrethrum. Sugar is grown in Kakamega and South Nyanza and will also be grown in Busia. A large number of fruits and vegetables could be grown for the urban markets or export. A few items, however, have the best prospects for success because they are well suited and are already being produced in the region, at least on a small scale. They already have a market, and at least the rudiments of an industry exist.

Oilseeds

This is a very promising group of crops, particularly for Busia and South Nyanza. Sunflowers and groundnuts are sporadically produced at present, and the potential for increasing yields is very high. Processing plants are needed to provide a reliable market for the growers. These processing plants should be established as private sector enterprises, which would also provide growers with basic extension services and production inputs, much as tobacco and sugarcane are now managed.

Kenya imports half of its edible oils at present, an unfortunate situation when adequate amounts of high quality oil can be produced in the country. There is also a good export potential for high quality oil. The GOK should provide encouragement and incentives to private investors in this area.

Dairy Production

Dairy production is among the highest potential activities for small farmers in these four districts. In some areas, particularly the northwest part of Kisii, it is already an important income earner. The main problem is that there are not enough processing plants in close proximity to the farmers.

Livestock feed, both quality and quantity, can be greatly increased. And livestock diseases must be dealt with more effectively. Overall livestock management practices need major

improvement but, if all these factors can be addressed in an integrated program on a location-specific basis, dairying can become a major income earner in all four districts. Whether processing and marketing stations are established by private sector investors or by the Kenya Cooperative Creamings, the GOK should encourage the expansion of the dairy industry in western Kenya.

Cotton

Cotton is already widely grown in the lower zones of Busia and South Nyanza. It is one of the most difficult crops to grow over a sustained period because of the multitude of diseases that affect it. The market for cotton fiber is also notoriously cyclical. For these reasons, it is not recommended as a sole cash crop for a farmer. But it can be a good income earner within a diversified cropping system. The GOK should increase efforts at research and extension and should assist the cooperatives in overcoming the problems in processing and marketing.

Other Specialty Crops

We found a number of crops that have good income earning potential. In the upper zones, farmers grow passion fruit, apples, and other deciduous fruits. In the lower zones, citrus is particularly promising as a cash crop. Papaya and papain production is already a budding industry in Kakamega. Swine, poultry, fish culture, rabbits, sheep, and goats all have potential in all four districts. A wide variety of spices might be grown profitably throughout the region.

Proposed Initiatives in Agricultural Services

Inputs

The distribution system for seeds, fertilizer, chemicals, and tools should be improved to assure their ready availability to farmers. The Danish project in this area is making good progress. Distribution seems to be more efficient when done by private merchants. The cooperatives also need a better system of stockpiling and distributing inputs. Government support and financing for such an effort should be considered.

Credit

A number of recommendations in the credit category are included in the rural enterprises section of this report. With respect to agricultural production credit, several general recommendations are appropriate here. Considerably more training is needed in the cooperatives for credit management. Production credit should not be extended, except under closely supervised conditions. The collection of production credit should be linked whenever possible to the marketing of the produce, although not necessarily through government-controlled marketing channels. Small-production credits, for example, can be channeled through agroprocessing firms, which would be responsible for collection of repayments and share any losses with the primary lender.

Marketing

The establishment of a number of agroprocessing facilities has been recommended elsewhere in this report. Pricing was covered in the policy recommendations. An important initiative should be undertaken to develop fresh produce marketing within the district and to other urban centers in Kenya. The GOK should encourage and support the private sector to expand market facilities.

FOOTNOTES

- 1 A consequence of price control is therefore, ironically, higher cost to farmers. Because of the limitations of the fertilizer marketing system, if farmers wish to secure fertilizer, they often have to travel to the major depots and then to arrange on their own for the transport of fertilizers back to their farm. They are also required to buy in 50 kg bags, which in many cases is more than they need or want at a given time. The result is that the effective farm-gate price for fertilizer lies well above the official price. And as a consequence of the loss of scale economics in transport and delivery, it may be higher than could be obtained in the absence of price controls.
- 2 We saw fields with signs indicating the type and brand of insecticide employed; as a result of such advertising, farmers could comparative shop. We saw cotton fields with signs indicating companies were demonstrating their pesticides.
- 3 For a further critique of the program of small-farmer credit, see Elsie B. Garfield, The Impact of the Integrated Agricultural Development Project Phase I: Assessment from the Field, August 1981.
- 4 E.G., See ILO Study, 1981, op.cit.
- 5 FAO Marketing Study.

CHAPTER FIVE
RURAL ENTERPRISE: SECTOR ASSESSMENT

INTRODUCTION

There is a substantial amount of business activity in all four districts, with greater concentrations in the more densely populated parts of Kakamega and Kisii. Trading enterprises and light manufacturing predominate throughout the region. Agricultural processing industries based on coffee and tea are located in the higher elevations where those crops are produced, while small-scale grain mills have been established at trading centers and smaller markets throughout the area. The sugar industry has become a major source of wage employment and a source of revenue for small-holder farmers in western Kakamega and in the eastern part of South Nyanza, and a large new project is being planned for Busia.

This assessment begins with a summary of current business activity and development assistance programs in the rural enterprise sector, and then describes a series of initiatives aimed at overcoming the major constraints affecting potential expansion of employment and productivity.

CURRENT STATUS

The following data (Table 5) related to Kisii District were obtained from Kisii District Development Plan, (pp. 39-41) and modified slightly to reflect more current data received during interviews in the field. From these data it is apparent that fewer than 100 people in the district are employed in agroprocessing industries outside of the well-established coffee and tea sectors and the service-oriented grain mills, which are frequently underused and uneconomic but could be justified on social grounds. The total number of workers in the agroprocessing industries

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Table 5. Rural Enterprise Activity Kisii District(1)

<u>Activity</u>	<u>Number of Establishments</u>	<u>Number of Workers</u>
Agro-Processing Industries:		
Tea Processing	6	300
Coffee Processing	67	1,000
Milk Processing	1	31
Jaggery Production	10	40
Leather Tanning	1	15
Grain Milling	<u>248</u>	<u>400</u>
Sub-Total	333	1,786
Light Manufacturing/Service Industries:		
Bakeries	3	60
Carpentry Shops	110	110 (2)
Shoe Making	18	18 (2)
Tailoring	20	20 (2)
Printing	1	8
Garages	<u>15</u>	<u>120</u>
Sub-Total	167	336
Wholesale/Retail Trade:	<u>1,500</u> (3)	<u>3,000</u> (4)
Total	1,998	5,122

(1) Kisii District Development Plan, 1979-83, pp. 39-41.

(2) Excludes an undetermined number of "unlicensed" tradesmen and informal employees actually engaged in these activities.

(3) Extrapolated from data presented in the source document.

(4) Extrapolated on the basis of an average of two workers per establishment.

accounts for only about 9 percent of total wage employment in the district and for less than 1 percent of the total population in the economically active age groups of 15 to 59 years old. The District Development Plan (p. 6) estimates that between 27,000 and 36,000 males of 16 years and older in the district have no land and are not engaged in full-time wage employment.

Data for 1976 presented in the Kakamega District Development Plan, 1979-83 (pp. 183-186) indicate a substantially higher level of commercial and industrial activity than exists in Kisii both in terms of the number of enterprises and the number of full-time workers. (See Table 6.)

The agroprocessing industries accounted for 18.6 percent of the total number of workers in the nonagricultural sector (estimated at 34,300 in 1976) but only 1.5 percent of the total labor force (425,500 in 1976). These percentages would of course be much lower if it were not for the very significant impact of the Mumias Sugar Company on employment in the district. Nearly 50 percent of the total labor force migrates to other areas in search of employment. (District Plan, p. 13.)

The Busia District Development Plan estimates that 4.5 percent of the total labor force was employed in commerce and industry in 1976, including 1168 engaged in wage employment and 3,000 self-employed. This percentage is projected to increase to 6.9 percent by 1983 (p. 41) with less than one quarter of the total being in wage employment and the balance self-employed. The projected rapid increase in self-employment is based largely on increasing trade with Uganda. In 1976, the commercial and industrial sector of the district economy was made up of a total 1,189 licensed establishments plus three cooperative unions that operate cotton gins and 29 primary cooperative societies. (See Table 7.)

Table 6. Rural Enterprise Activity Kakamega District(1)

<u>Activity</u>	<u>Number of Establishments</u>	<u>Number of Workers</u>
Agro-Processing Industries:		
Grain Mills	265	398
Jaggery Production	30	240
Mumias Sugar Company	1	5,500
Kabras Sugar Company	1	140
Gambogi Papain Factory	1 (2)	70 (3)
Coffee Processing	<u>6</u>	<u>20</u>
Sub-Total	304	6,368
Light Manufacturing/Service Industries:		
Garage (repair/engineering)	107	492
Bakeries	5	68
Carpentry Shops	64	160
Tailoring Shops	73	146
Block Making	<u>3</u>	<u>15</u>
Sub-Total	252	881
Wholesale/Retail Trade		
Wholesale:		
Catering	134	1,072
Butcheries	390	1,560
	240	480
Retail:		
Charcoal Dealers	2,286	4,572
Petrol Stations	21	63
Hides Dealers	36	180
Miscellaneous	6	12
	<u>29</u>	<u>48</u>
Sub-Total	3,142	7,987
Informal Sector:	<u>1,200</u> (3)	<u>2,434</u>
Total	4,898	17,670

(1) Kakamega District Development Plan, 1979-83, pp. 183-86.

(2) Ibid., p. 65.

(3) Estimate.

Table 7. Rural Enterprises Activity Busia District(1)

<u>Activity</u>	<u>Number of Establishments</u>	<u>Number of Workers</u>
Agro-Processing Industries:		
Cooperative Cotting Ginning	3	300 (2)
Posho Milling	71	142
Jaggery Processing	<u>5</u>	<u>40</u>
Sub-Total	79	482
Light Manufacturing/Service Industries:		
Motor Vehicle Repairs	5	18
Bakeries	11	44
Carpentry Shops	2	4
Tailoring Shops	8	12
Repair Shops	<u>9</u>	<u>18</u>
Sub-Total	35	96
Wholesale/Retail Trade		
Wholesale:		
	36	288
Catering	114	456
Butchery	126	252
Retail:		
	700	1,050
Produce Dealing	29	44
Petrol Stations	4	16
Charcoal Dealing	2	3
Bars	49	98
Laundries	8	24
Hides/Skins Dealing	6	9
Miscellaneous	<u>4</u>	<u>8</u>
Sub-Total	1,078	2,248
Informal Sector:	<u>600</u>	<u>1,342</u>
Total	1,792	4,168

(1) Busia District Development Plan, 1979-83, pp. 44.

(2) Estimate.

Only about 1 percent of Busia's labor force was employed in the agroprocessing and light manufacturing sectors combined in 1976, with commercial activities dominating the nonfarm labor picture. It is unlikely that this has changed very much since then although a new sugar factory scheduled to open in 1983 will have a measurable impact. The district plan projects a rapidly increasing rate of unemployment among school leavers "not interested in farming" (p. 10).

A very similar picture is presented in South Nyanza, where approximately 3,500 small businesses operate. The major agroprocessing industries in the area include sugar processing, tobacco curing, sisal processing, cotton ginning, and a printing works. While a detailed breakdown of the commercial and industrial establishments is not available, it is safe to assume that, as in Busia, not more than 1 or 2 percent of the total labor force is employed in the agroprocessing and light manufacturing sectors.

ASSISTANCE PROGRAMS

Industrial Credit

Currently five government agencies and parastatal organizations engage in promoting small- and medium-scale industrial development outside of the major urban centers of western Kenya. They include the Kenya Industrial Estates, the Industrial and Commercial Development Corporation, the Development Finance Corporation of Kenya, the Ministry of Commerce, and the Industrial Development Bank.

The Kenya Industrial Estates (KIE)

The KIE is currently operating in three of the four districts covered by this study, the exception being Busia. The KIE provides four basic services for its clients:

- Assistance in preparing feasibility studies;
- Low rent factory shells;
- Common service centers; and
- Credit.

The factory shells are divided into three categories according to location and scale:

- Industrial Estates;
- Rural Industrial Development Centers (RIDCs); and
- Industrial Promotion Areas (IPAs).

The industrial estates are located in the larger cities and are intended to house medium- to large-scale enterprises. The RIDC units are smaller and are located in the smaller towns. IPAs are intended for use by very small businesses and are located in rural market centers. While most KIE clients are located in these facilities, some are operating in other parts of the town and district. Each of the KIE sites is provided with a common service center containing relatively expensive equipment such as lathes, metal stamps, and bending machines for the use of all clients and others on a fee basis.

While these various types of services are offered by KIE, the organization appropriately sees itself primarily as a lending agency. KIE can lend an entrepreneur up to 85 percent of the total cost of a project at 10 percent interest with a grace period of 6-18 months and a repayment period of three to eight years. The maximum amount that can be lent to a single enterprise is Ksh 5 million.

The KIE officers interviewed estimated default rates on KIE loans at between 40-70 percent, although no hard data were made available to confirm these estimates. The corporation's annual report for 1979-80 showed a net loss of Ksh 16.5 million on a total loan portfolio of Ksh 84.3 million, indicating these estimates are probably correct.

The Kisii RIDC had 19 clients with outstanding loans totalling Ksh 2,620,200 as of June 30, 1980, nearly 40 percent of which was tied up in one bakery, which had been out of operation for more than one year at the time of our visit. The other clients the team visited at the Kisii center appeared to be doing quite well, however, including an auto-body workshop, a carpentry workshop, and a tailoring shop, each of which employs about 20 people. Other clients included metal workers, soapstone carvers, a stone quarry, timber cutters, and shoemakers. New projects currently being implemented include posho mills, an animal feed mill, and a sunflower seed oil mill. Among several projects now being considered is a pork processing plant.

The KIE established an RIDC in Kakamega District in 1977. By the end of fiscal year 1979-80, 19 enterprises had been assisted with loans totalling Ksh 4,930,000. Seven of these enterprises are located in the RIDC with the others being spread around the district. The small-scale sugar factory owned by Kabras Investments, together with KIE, accounts for over 80 percent of the total KIE loans in the district and 60 percent of the jobs created (170). Recently, a serious fire forced the factory to close; it is now being rebuilt. Loans for other enterprises average Ksh 50,000 per enterprise. The manager at KIE Kakamega estimates that loan repayments are in arrears by an average of six months. Other enterprises currently being assisted in the district are engaged in tanning, building-block manufacture, printing, sugar processing, furniture manufacture, garment making, dry cleaning, metal working, animal feed production, and poultry production.

A number of new projects have been approved for KIE support in Kakamega, including several posho mills, a stone quarry, another animal feed mill, and a sunflower seed oil mill. Among several others in the pipeline is a pork processing plant.

A KIE office was established in 1978 at Homa Bay in South Nyanza. An RIDC with a service facility (containing 12 workshops) is currently being constructed. Two enterprises were implemented prior to the close of the 1979-80 fiscal year involving a total of Ksh 63,000 and 12 jobs created. These two enterprises, an engineering workshop and a carpentry shop, were still the only active projects at the time the team visited, and both are making their repayments on schedule.

Five new projects have been approved in the district--a bakery, tailoring shop, garage, metal working, and posho mill--and several others are currently being considered, including two posho mills, a furniture workshop, a cement block manufacturing operating, a jaggery mill, a dry cleaning establishment, a blacksmith shop, and a tannery. The KIE is also currently planning to establish a RIDC at Migori in the southern part of the district.

In sum, KIE has invested approximately Ksh 7.5 million in the four districts, at least Ksh 5 million of which was tied up in two enterprises that were not operational at the time of our visit.

Ian Livingston, in Rural Development, Employment and Incomes in Kenya, is rather critical of the KIE program:

In contrast to the objectives set, the enterprises established on the KIE industrial estates exhibit a very high capital/labour ratio; the impact of the entire KIE/RIDC programme on employment has been minimal, equal only to a negligible 0.4 percent of formal sector employment in 1978; and the programme of KIE loans and estates has not contributed to the decentralization of manufacturing industry.[1]

He adds, however, that "the proposed regional system of major and minor workshop clusters should add new content to the RIDP." [2]

The program's major weak point, which would at least partially account for the high default rate and arrears on loan repayment, appears to be the lack of any extensive ability to provide on-going management and technical assistance to borrowers.

The Kakamega and Kisii facilities were staffed by only two professionals each and the Homa Bay office by only one. It is clearly not possible for this limited number of staff to manage their loan programs successfully and extend extensive management and technical assistance to their client group. KIE, however, does provide short courses and seminars on bookkeeping and general management topics from time to time. With current staff levels this is probably all that can be expected.

Industrial and Commercial Development Corporation (ICDC)

The ICDC is represented in the region by provincial level offices in Kisumu and Kakamega and by one officer in Kisii. Supervised by the Ministries of Commerce and Industries, the ICDC is a parastatal organization whose purpose is to promote commercial and industrial development in the country. It provides three types of loans--commercial, industrial, and property--and makes direct equity investments in selected business ventures.

Industrial loans, about 10 percent of the total, are subdivided into two categories: large scale and small scale. The small-scale loans (about 90 percent of total industrial loans) are for enterprises requiring from Ksh 10,000 to Ksh 2,000,000 in total capital. Large-scale enterprises are considered to be those requiring more than Ksh 2,000,000. Industrial loans can be used to finance up to 80 percent of the cost of a venture and are offered at an interest rate of 11 percent with a grace period of

6-12 months and repayment periods of 5-15 years. The ICDC can also make direct equity investments in large-scale enterprises. No figures were available regarding the level of ICDC investments in the four districts covered by this study.

The Management Services Division in Nairobi assists in the preparation of feasibility studies and provides consulting advice to small industries and large joint ventures. The field offices do not have a technical assistance unit. The default rate on loans was reported to average about 50 percent overall with the highest rate being in Kisii. The primary purpose of placing an ICDC officer in Kisii was to collect on overdue commercial loan repayments. The amount of arrears in the district has decreased from Ksh 12 million to 8 million over the past two years.

Development Finance Corporation of Kenya, Ltd. (DFCK)

Established in 1963 the DFCK is an industrial finance organization that invests primarily in manufacturing and agricultural processing industries in Kenya. Medium- and long-term loans and equity investments are made available to qualifying enterprises. The DFCK often participates in the preparation of feasibility studies and implementation plans prior to approving specific investments. The minimum DFCK investment in any one enterprise is Ksh 400,000, except in the case of its Small Scale Industries Scheme under which a smaller amount may be approved. There is no maximum investment level.

Shareholders in DFCK include the ICDC, the Commonwealth Development Corporation, the German Development Company Ltd., the Netherlands Finance Company for Developing Countries, and the International Finance Corporation (IFC). The DFCK has received other financing in the form of loans from the shareholder organizations as well as from other international donor agencies. Substantial amounts of investment funds are also being generated from the operating surpluses of the company--over Ksh 23 million in 1980.

DFCK offices are located in Nairobi; the organization has no branches in western Kenya. The team was unable to meet with DFCK officials in Nairobi or to obtain any indication of their involvement in western Kenya.

District Trade Development Joint Loan Boards

District Trade Officers were interviewed in all four of the districts covered by this study. The position of Provincial Trade Officer no longer exists so each of the district-level officers operates independently, reporting directly to Nairobi. The Ministry of Industries is not represented at the district level so the District Trade Officer also carries out certain functions for that ministry. The District Trade Officers are responsible for the operation of the District Trade Development Joint Loan Boards, which provide loans to small commercial and industrial enterprises for periods of up to five years at an interest rate of 6.5 percent. The District Trade Officers are also responsible for the licensing of all private sector enterprises in their districts and provide occasional short training seminars for small business proprietors in the areas of accounting and general management.

A small revolving loan fund has been established in each district. The fund is controlled by a committee of government officers under the chairmanship of the District Commissioner. Each year the district is provided with a small grant from the government to replenish and expand the operation of the fund. The local county councils are supposed to contribute to the fund, but they have not done so in the districts visited.

The Joint Loan Board in Kisii has made 45 loans totalling Ksh 330,000 in 1981-82 using a grant of Ksh 93,000 received from the government and funds recovered from previous loans. It has previously received annual government grants of around Ksh 160,000

per year. The amount was reduced this year as a result of overall budgetary constraints. Kakamega received a grant of Ksh 95,000 this year and extended loans totalling Ksh 470,000.

All loans are fully secured by tangible property; yet the defaults are said to be very high. Repayments in Kisii, for example, were more than Ksh 700,000 in arrears at the time of our visit in November.

The vast majority of Joint Board loans are given to small traders in amounts of Ksh 10,000 or less. The proportion of loans flowing to small-scale manufacturing operations could be increased if this were made a priority of the program.

Industrial Development Bank, Ltd. (IDB)

The IDB is a government-owned corporation established in 1973 to promote the establishment, expansion, and modernization of medium- and large-scale industrial enterprises in Kenya. The development of rural based agroprocessing industries is currently the highest priority of the organization. It is empowered to make direct equity investment in individual enterprises and to extend medium- and long-term loans. It can also provide guarantees for loans from other sources and underwrite other forms of financing.

The IDB is prohibited from making investments of less than Ksh 400,000 in any project. It may cover up to 75 percent of the total cost of small- and medium-scale projects, although it is currently unable to approach this limit because of a lack of investment resources. Medium-scale projects are defined as requiring between Ksh 1 million and 10 million. Large-scale projects are those requiring more than Ksh 10 million in total capital. The IDB may not acquire more than 49 percent of the share capital of any single enterprise.

The IDB provides assistance in the analysis and operation of individual enterprises through its Nairobi based Research and Promotion Division but maintains no field based technical assistance unit or branches. As of December 31, 1979, the IDB had made equity investments in 37 enterprises totalling Ksh 91 million. Nearly Ksh 240 million was outstanding in loans to 70 enterprises. No breakdown of investments in the four districts studied was available.

Other Sources of Credit

Cooperatives are also important in the overall rural industrialization movement. Cooperative coffee processing factories were probably the first agroprocessing industries established in Kenya, and they continue to play an important role in the local economies of the coffee-growing areas, including parts of Kisii and Kakamega. From 80 to 100 such factories now operate in Nyanza and Western provinces. There are also several cooperative-owned cotton gins in the area; these gins provide jobs and stimulate small-holder cotton production. Similarly, cooperatives play a lead role in the initial processing of pyrethrum flowers and in the processing and distribution of milk. Financing for these activities is provided primarily by the Cooperative Bank, which has a branch in Kisumu town and another in Kisii.

Commercial banking institutions must also be considered as sources of industrial credit along with the organizations mentioned above. The most important banks are Kenya Commercial Bank, Barclay's Bank, and Standard Bank. Each bank is prepared to extend credit to rural industries on the basis of traditional banking principles, but there is very little lending outside of the major urban areas although all operate rural branches.

Thus, substantial amounts of industrial credit are available from several different sources in the region. Interest rates are reasonable, and loans are available on long enough terms to be

reasonably applied to industrial development purposes. As a result of very poor repayment rates, all of the lenders are now requiring tangible security against their loans, thus limiting the availability of credit to many people.

It is interesting to note that agricultural land has not been found to be effective security for small-scale agricultural, commercial, and industrial loans. The lenders (AFC, ICDC, and the Joint Loan Boards) find it difficult to take physical possession of the land and evict the debtor, and are sometimes hesitant to do so. In some areas (Kisii, in particular) they find it difficult to resell the land even when they do take legal possession.

On the basis of a brief review of the area, it is not possible to state that the amount of loan capital available is sufficient or insufficient to develop the area agriculturally or industrially. All of the people interviewed, however, were definite in their opinion that the amount is insufficient. Yet this conclusion is open to question because such a large portion of the loan capital available seems to be so poorly used.

The public sector agencies making relatively small loans (KIE, ICDC, and the Joint Loan Boards) would have more capital available for lending if they were more efficient in their collection of loan repayments. The commercial banking sector is currently suffering from reduced private savings as a result of inflation, and the team was told that Kenya Commercial Bank has suspended all lending activities temporarily because of a lack of funds. The parastatal institutions making large-scale industrial loans (ICDC, IDB, and DFCK) are dependent upon external borrowing and internally generated funds, both of which are now constrained as a result of the macroeconomic problems in Kenya and the developed countries.

Defaults and arrears in the public sector lending programs directed to small enterprises are much too high to operate on a viable basis. Several reasons have been suggested to explain why loan repayment rates are so poor. They include the following, several of which are interrelated:

- Attitude: Many people have the attitude that any loans received from the government or agencies identified with the government are in fact grants and do not really require repayment. Indeed, some of the representatives of the government and parastatal lending institutions with whom we met do not seem to regard the high default rates and arrears as a very serious concern;
- Misuse of Loan Funds: A portion of loan funds is frequently used for purposes other than those for which it is intended, thus limiting the likelihood that the business will be established on a viable basis, and enabling loan repayments to be made from profits;
- Poor Management: The launching of a new venture without a proper feasibility study or business development plan frequently leads to business failure and the loss of loan capital;
- Corruption: At times loan funds intended for business or cooperative purposes are apparently misappropriated for the personal benefit of individuals;
- Pocr Loan Follow-up: The governmental and parastatal lending institutions are inadequately staffed to follow up on individual loans and are sometimes hesitant to seize the collateral that has been offered by defaulting borrowers;
- Lack of Technical Assistance: Loans appear often to be made without adequate feasibility analysis or follow-up technical assistance to ensure efficient production and loan repayment. Enterprises may also fail because they do not have access to appropriate managerial and technical assistance in their day-to-day operations;
- Lack of Production Inputs: Both agricultural and industrial loans are lost when appropriate production inputs are not available at the required time; and
- Lack of Repayment "Check-off": The Cooperative Bank especially seems to suffer in its cotton production loan program because its loan repayments are not deducted from

income at source (Cotton Board). The same problem applies in the cereals loan programs where farmers are paid directly or through their cooperatives by the NCPMB.

It appears that the public sector lending institutions have developed appropriate procedures and criteria for the lending of industrial credit. They also seem to be genuinely interested in increasing the portion of their loan portfolios dedicated to the development of agroprocessing industries. This is consistent with the current government policy. They need to improve their loan management practices to obtain the most positive results from the limited amount of loan capital available.

Perhaps the problem is that too many loans are being given with too little attention being paid to ensuring that each results in the establishment of a viable enterprise. The current emphasis on maximizing the amount money loaned should be changed to an emphasis on maximizing the number of viable businesses developed and the rate of loan repayment.

The large-scale lending and investment programs appear to be more successful in recovering their loans. The DFCK has reported net profits for the past several years. The reasons that these programs have not had more impact in the development of rural-based medium-scale agroprocessing industries is probably due more to their lack of field-based technical assistance units than to inefficiencies in their programs. The operation of these institutions--ICDC, DFCK, and IDB--should be much more thoroughly studied before any new projects are launched to promote agroprocessing activity in the country.

Technical Assistance Programs

None of the programs reviewed included the operation of field-based management consulting units aimed at assisting entrepreneurs with their day-to-day operational and management problems. The KIE, ICDC, and IDB all maintain consulting and

technical assistance units centralized in Nairobi. The general lack of such assistance in the field is a major constraint to the development of viable industrial enterprises.

Small-scale industries require very basic types of assistance in the areas of business planning, accounting, product selection and development, and general management. They generally will not require intensive assistance over a long period, but they do need to have access to generalized training programs and specific, problem-oriented assistance from time to time. Larger-scale industries require more intensive assistance, particularly in the preparation of feasibility studies, business plans and financial packages, financial management, and technical problem solving.

The Partnership for Productivity Foundation program in Kakamega does operate a Rural Enterprise Extension Service, which has for several years provided management training to individual shopkeepers, primarily in the area of bookkeeping and management. That agency is also providing management and technical assistance to several of the small businesses in the KIE Estate in Kakamega. They are able to assist in product selection and design as well as in general management training and other areas.

Other private voluntary organizations in the country specialize in providing management training and technical assistance to small- and medium-scale enterprises. They include the following:

- Technoserve, Inc. provides direct management assistance to small- and medium-scale agribusiness and savings and credit cooperatives. It is able to provide either short- or long-term assistance as required;
- Institute for International Development, Inc. specializes in matching U.S. investors with small-scale local businesses and providing management and capital assistance to new ventures;

- CORAT Africa specializes in the provision of management assistance to religious organizations throughout the country. It prepares training material and conducts management training courses; and
- Diocese of Maseno South operates several programs that relate to the development of small-scale enterprises, including poultry keeping, horticulture, fish farming, and village technology, through the Rural Development Service of this Anglican Diocese which encompasses Nyanza Province.

These and other organizations such as the National Christian Council of Kenya might be encouraged to increase and redirect their work somewhat to maximize their impact on the development of small- and medium-scale enterprises in Kenya's rural areas.

MAJOR CONSTRAINTS

Manpower

Unskilled labor is plentiful in all four districts although, of course, more so in the densely populated areas of Kakamega and Kisii. The availability of skilled labor is a constraint to rural industrial development, however, with most of the rural population having had no technical training or industrial work experience.[3]

The Village Polytechnic (VP) program appears to be a constructive way of upgrading the rural labor force. The VPs visited in Busia and Kisii appeared to be doing a good job of providing school leavers with a basic technical education in the areas of tailoring, carpentry, metal working, and masonry. The graduates of these polytechnics are in demand in the local areas. Approximately 70 percent remain in the area after completion of their two-year training program and are able to earn a living in their trade. Many young VP graduates are organized into informal work groups, where they undertake contract work under the supervision of VP instructors while increasing their skills and saving money to buy tools to start their own business or to seek wage

employment. With approximately 250 VPs in the country and 81 in Nyanza and Western provinces alone graduating an average of 20-50 people per year each, the VPs are making an important contribution toward building up the technical base of the rural work force.

The VPs will eventually, however, find the employment opportunities in the trades for which they offer training to be very limited. Opportunities will increase somewhat along with general economic development levels in the rural areas, but one must assume that eventually the need for tailors, carpenters, and metal workers will be satisfied. Consequently, the VPs should continue to adjust their programs to relate to the changing job markets in their particular areas.

The possibility of developing small-scale agroprocessing and manufacturing industries directly related to specific VPs should be examined. Such enterprises could serve both as training opportunities for VP students and as sources of income for the VPs themselves, enabling them to further develop their training programs and serve more students. The establishment of small industries would require that an investment fund be established to capitalize their development and that appropriate managerial and technical assistance be offered to ensure that they are operated efficiently and that the loans are repaid and lent to other VPs.

The most serious manpower problem related to a rural industrialization program is the shortage of trained and experienced management personnel in the country in general and in the rural areas in particular. This problem can be overcome partially by attaching sufficiently attractive salaries and benefits to management positions to attract the most qualified people available, and partially by providing intensive managerial assistance and on-the-job management training during the early years of an enterprise's operations. The operation of such a technical assistance program is expensive, but the establishment of appropriate management systems is essential to the operation of a successful manufac-

turing or processing activity. In the long run, it is more economical to pay the initial cost of establishing a few new enterprises on a sound basis from the beginning than it is to have a large number of expensive and demoralizing business failures or to try to save enterprises that are failing as a result of avoidable management problems.

Entrepreneurial Capital

The lack of entrepreneurial capital in the rural areas is undoubtedly one of the most serious constraints to rural industrialization. Most of the entrepreneurial capital in the country is located and used in the urban centers. This is partially a result of the lack of perception of rural industrial opportunities and partly due to the shortage of entrepreneurial capital in the country as a whole. Those entrepreneurs who do have access to equity capital in substantial amounts tend to favor investments in real estate and urban-based commercial activities. These are perceived of as being less risky and less demanding in terms of their own management talents and time. All of the lending institutions that do or might lend to rural industries require security for their loans in the form of tangible assets. It is not unreasonable for local investors to shy away from this kind of risk when other, more attractive investment opportunities exist.

The lack of appropriate amounts of entrepreneurial capital is, in fact, one of the factors increasing the risk of failure of the business ventures that are initiated. Many businesses, small, medium, and large, are capitalized with an equity component of as little as 15 percent of the total cost of the enterprise, with the balance being supplied in the form of short- and medium-term loans. This leads to undercapitalization in many cases and in heavy near-term debt service requirements, which even potentially viable businesses have trouble carrying during the early period of their development.

It should be possible to attract substantial amounts of local private capital to the rural areas of western Kenya by means of a well-developed industrial support system that enhances the ability of local investors to make appropriate investment decisions and implement projects successfully. It should also be possible to attract limited amounts of foreign investment into medium-scale agroprocessing industries when opportunities are clearly defined and appropriate government incentives are offered.

Rural Infrastructure

While the lack of infrastructure in the form of roads, electricity, and running water is an impediment to the establishment of rural industries in some areas, this should not yet be considered a serious constraint to the industrialization of the region as a whole. There are ample unexploited industrial opportunities in areas where adequate infrastructure is available. As infrastructure is expanded to new areas, it will be possible to establish industrial activities in those areas. We do not feel that it is realistic or reasonable to suggest that a massive investment in rural infrastructure is a prerequisite to a meaningful rural industrialization program. Ways must be found to work within the constraints of existing infrastructure facilities and maximize the return on new projects.

Summary of Major Constraints

There are, of course, many constraints to the development of any rural industrialization program in a largely underdeveloped area such as western Kenya. Several of these constraints have been discussed earlier.

Sufficient unskilled labor is available in the area, and a pool of semiskilled labor is developing as a result of the VP program. The problem of a lack of trained and experienced

managerial talent can be addressed by designing incentive packages that will be able to attract qualified people to the rural area. Increasing the support for management training programs and providing intensive management and technical assistance to individual enterprises to increase the capability of people already occupying management positions will also continue to improve the general level of capability of managers in the rural areas.

Problems in the credit management system have been discussed rather extensively earlier. Substantial amounts of loan capital are available for lending to small- and medium-scale enterprises, but management of these loan funds is generally poor. The government is in the process of decreasing its control over the marketing of manufactured consumer goods although controlled prices and import controls are likely to be a problem for certain elements of the private sector for some time to come.

It appears that the most important constraints in western Kenya are the shortage of entrepreneurial capital in the area and the lack of a field-based technical and managerial assistance capability.

PROPOSED INITIATIVES

General Strategy

A rural industrialization strategy, built upon the following three points, should be adopted:

- Increasing the effectiveness of the credit management systems in the industrial and commercial sectors;
- Increasing the productivity and efficiency of the light manufacturing industries in the area; and
- Promoting the development of small- and medium-scale agro-based industries, which are closely linked with the agricultural production program proposed earlier.

A multidimensional approach is required, involving strengthening government and parastatal programs and management systems, injecting new investment funds into the area, and increasing the amount and quality of technical and managerial assistance available. The policy environment for agroindustrial development is quite good. It should be possible to develop a rural industrialization program that is fully consistent with current government policy as described in the National Food Policy Statement (Sessional Paper No. 4 of 1981) and the 1979-83 Development Plan.

Such a program could contribute both to national food security and to increasing the level of agricultural exports from Kenya. It could increase primary and secondary industrial employment opportunities in western Kenya. It could also increase small farmer productivity and incomes as the new markets serve as an incentive to farmers, who are also provided with required crop specific technical assistance and production inputs by the processing companies.

A "process" approach to the problems of the area that leads to the development of sound industrial projects based on small-holder agriculture is called for. The process is a long-term one, however, and it is not reasonable to expect that much will be accomplished in the short-term or by simply injecting increasing amounts of loan funds into the area.

Agro-Industrial Opportunities

The selection of specific investment opportunities should be undertaken only on the basis of comprehensive feasibility studies that take the following factors into account:

- Analysis of the comparative advantage of a certain area in the production of specific crops;

- Market for specific products;
- Cost of capital equipment and operations;
- Availability of required supporting services and infrastructure;
- Size and quality (skill level) of the available work force;
- Managerial complexity of the enterprise;
- Availability of capital; and
- Degree to which a given enterprise is consistent with current government policy and national requirements.

A number of areas have been identified in which the development of agro-based industries would be viable and positive in an overall economic development sense. These opportunities include the following:

- Tanneries: There are presently large numbers of raw animal skins being exported from the region for processing overseas; they could be processed, at least to a semi-finished state, locally. This could, over time, lead to the gradual development of a vertically integrated leather processing industry producing finished goods for local sale and for export. The establishment of a tannery in Kisumu, or the reactivation of the one that is there already, would benefit the entire region. The feasibility of establishing smaller scale units in Busia and South Nyanza for intermediate or final processing should be studied carefully as a means of generating rural employment opportunities and locating tanneries closer to their sources of supply;
- Oil Milling: Kenya is currently a net importer of large quantities of edible oils. Large areas of western Kenya, particularly in Busia and South Nyanza, are well suited to the production of oil seeds (sunflower, ground nuts, and soya beans), which could be processed locally for sale in the regional and national markets. The results of previous efforts in this area should be closely studied before new investments are undertaken;
- Milk Processing and Marketing: The western region is currently an importer of milk and milk products. When carefully coordinated with a program to increase milk production in the region, it should be possible to establish

a vertically integrated dairy industry beginning with simple cooling and marketing and gradually expanding to include milk powdering and the manufacture of butter, cheese, and other dairy products for local consumption. There is currently no milk processing facility in any of the four districts though part of Kisii is served by the Kenya Cooperative Creameries plant in Sotik. All four districts have a considerable unexploited potential for increased milk production--if livestock disease problems can be overcome by the agriculture program;

- Small-Scale Sugar Production: Small-scale sugar factories could be established in a number of areas suitable for sugarcane production. Such factories would have the advantage of not requiring farmers to eliminate their production of basic food crops as it can be carried out within a mixed cropping system. Currently several jaggery plants operate in Kakamega and Busia. The possibility of replicating such plants and introducing alternative technologies for the production of crystal sugar or intermediate products (for example, syrup for the baking and confectionary industries) should be investigated in all four districts, particularly Busia and South Nyanza;
- Fruit and Vegetable Processing: There appears to be an immediate opportunity for establishing a passion fruit processing plant in Kisii, and papaya processing appears to be a viable activity in certain parts of the area. Other types of fruit and vegetable processing or packing might be viable in the most densely populated districts; and
- Tree Nurseries: Small-scale private nurseries to propagate and sell young trees to farmers have good potential. Citrus, mangoes, papaya, and banana are in high demand. Some temperate fruits can also be propagated. Fast-growing wood species and multi-purpose trees could be propagated profitably. Such projects would probably be of most value in the more rugged parts of Kisii and Kakamega districts through considerable potential appears to exist in all four districts.

Other opportunities that should be investigated include the manufacture of building materials such as brick and tile; the exploitation of small mineral deposits, blacksmithing, animal feed production, fish processing, flour milling; and the processing of by-products currently left as waste by the coffee factories and others. The KIE is currently planning to assist several enterprises in the areas of leather tanning, edible oil milling and

animal feed production in the area. The experience of these new firms should be closely studied for guidance in planning the implementation of additional projects.

There is little need to distinguish between the high and low population density areas of the region in terms of overall strategy. The basic constraints to rural industrialization are more or less common to all of the districts. There would, of course, be differences in the type of industries found to be appropriate to each district on the basis of available production resources and markets. The high density areas are more likely to concentrate on fruit and vegetable processing, poultry production, and labor intensive light manufacturing, including tailoring, carpentry, and metal working, than are the low density areas, which will find it possible to develop more land intensive activities such as sugar processing, animal feed mixing, and the production of edible oil.

Project Possibilities

A number of different projects might be considered in carrying out the general development strategy suggested above. These vary in terms of their cost, organization structure, specific beneficiary groups, and magnitude of impact. Some could be implemented as part of a multifaceted district development project. Others could best be organized on a provincial or regional basis either independently or as an "add-on" to existing programs. While the greatest possible benefit would be derived from implementing all or several of these projects simultaneously in an integrated fashion, significant impact could also be realized from introducing any project individually if it were carefully planned and managed and linked to existing programs in the area.

Several different types of project interventions will be considered here in order of priority as determined by the contract team. While we think that the Venture Capital/Technical Assistance Unit is the most important new initiative that should be studied further with an eye towards implementation, the reader may wish to reorder the other items on the basis of objective or subjective criteria of which the team is not aware, or to make optimal use of limited available resources.

Venture Capital/Technical Assistance Unit:

The development of a viable and productive rural industrialization program for these four districts must take into account both of the major constraints to such development: the lack of entrepreneurial capital and the lack of technical and managerial assistance in the region. It is recommended that a Venture Capital/Technical Assistance Unit be established to address both of these problems directly.

The Venture Capital Fund would focus its attention on making long-term equity, or near equity, investments in rural-based industries identified and studied by the Technical Assistance Unit. Such financing would be provided on normal commercial terms, but the fund would have access to external leverage funds from an external donor on soft terms with which to extend its investment portfolio. The availability of external leverage funds should be limited to a factor equaling not more than about five times the amount of equity invested in the fund by local private or public sector investors. Funds should be judiciously used to maximize the flow of private capital, both local and foreign into the region.

Although ideally the Venture Capital Fund should be placed in the private sector, the possibility of attaching it to one of the parastatal organizations already active in the enterprise

development field in the region should be considered. The Kenya Industrial Estates or the Industrial and Commercial Development Corporation would be likely candidates with the ICDC perhaps providing the closest fit in terms of its mandate and operations. In either case the program should be operated independently of its parent agency's other activities. The objective of this part of the program is to make available medium- and long-term investment capital, which has not been readily available before, attract other equity investments from local and foreign private investors and debt capital on reasonable terms from local banks.

The Technical Assistance Unit would be staffed by about five highly qualified and experienced professionals in the fields of management, finance, marketing, engineering, and agriculture. They could be a mixture of Kenyan and expatriate personnel. One to three expatriates should be the maximum required. After a start-up period of three to five years, the program should be staffed entirely by Kenyans, except for occasional specialized needs that cannot be satisfied locally.

The Technical Assistance Unit would undertake a number of activities on behalf of the Venture Capital Unit and its clients including the following:

- Feasibility analysis;
- Loan preparation and appraisal;
- Business planning;
- Management systems design and implementation;
- Market research and development; and
- Technology identification and selection.

The Technical Assistance Unit would act on behalf of the fund to identify and evaluate appropriate projects that might benefit from fund participation in its financing. At the time fund

participation is being negotiated, the Technical Assistance Unit would also negotiate an appropriate long-term role for itself in the management of the client firm. The nature of this role would vary, depending upon a number of project specific factors, but the objective would be to fill specific technical roles in the management of the client firm to enhance the chance of long-term financial viability and protect the financial interest of the Venture Capital Fund. In some cases the Technical Assistance Unit might play a strong direct management role in the client firm while in other cases its advisers might do no more than fill an oversight and advisory function and serve as internal auditor of the firm's accounts.

The cost of services provided by the Technical Assistance Unit should be at least partially covered by fees which the client firm pays for those services. These fees, together with investment income should make the combined Venture Capital/Technical Assistance Unit largely, if not totally, self-sustaining within five years. It will also, of course, provide a place for government or foreign donors to place additional operating support funds if they wish to accelerate or expand the rural industrialization process based on this program.

The Venture Capital/Technical Assistance Unit proposed here bears strong similarities to the International Small Business Investment Companies (ISBIC) program, which has been designed by AID/W in Project Identification Documents (PID) form. Copies of this PID are available from the Private Enterprise Bureau in Washington or from Gary Kilmer at DAI. The team recommends that this document be studied both by GOK and USAID officials to determine if and how the concept might be applied in western Kenya. The project suggested above is one possible variation on the ISBIC theme; we think it would respond to the constraints to rural industrialization in western Kenya. There may be other variations a project design team would be able to identify.

A project such as this can best be implemented on a regional basis (Nyanza and Western provinces) excluding the Kisumu urban area, except under special circumstances. Concentrating only on the four districts covered by this study could unduly constrain the operations of the fund and limit the number of available projects from which investments can be chosen.

We hesitate to estimate the potential cost and impact of such a program because of the large number of variables involved. It is possible, however, to indicate the orders of magnitude of cost and impact that might be expected although such figures must be based on a number of simplifying assumptions.

- The Venture Capital Unit would invest about \$2 million in 40 client enterprises throughout the region over a five year period. This would leverage about \$6 million in private sector investment. (The Venture Capital Unit would provide an average of 25 percent of the total investment (\$200,000) in each enterprise assisted.)
- The 40 enterprises assisted would employ an average of 50 workers; thus, 2,000 direct jobs would be created with at least an equal number being created by the secondary effects of the project (forward and backward linkages).
- Small farmer productivity would increase as a result of direct supply relationships with new enterprises.
- Substantial amounts of foreign exchange would be saved and earned as a result of the increased farm productivity and processing and marketing capacity.
- The capital cost of the project would be approximately \$2 million with one-fourth being provided by the parent institution or other local public and private sector investors and \$1.5 million being provided on concessionary loan terms by an external donor.
- Operating costs would total between \$2-2.5 million for the five year period, with the highest costs being incurred in the early years of highest expatriate involvement.
- Operating subsidies of \$1.5-2 million from the GOK or foreign donors would be required until program becomes fully self-sustaining, based on fee and investment income, after five years.

Support to Village Polytechnics:

The Village Polytechnic programs we visited in western Kenya are impressive. While accomplishing a great deal in the development of the skilled and semiskilled manpower base and providing basic manufactured goods to consumers in the districts, they are constrained by a severe lack of trained staff and financial resources. The only regular financial support they receive from government is in the form of teachers who are paid directly by government. Other operating and capital costs, including fees paid by students, the income from products sold, and occasional small grants of equipment or supplies, must be met from the income of the centers.

Three types of assistance, all of which could be tested at relatively low cost, might be tested as ways to strengthen the Village Polytechnic movement:

- The establishment of a district or provincial (preferably district) level technical unit within the Ministry of Social Welfare and Community Development to assist individual VPs with curriculum development, market identification, and product selection and development;
- The provision of skilled expatriate volunteers to VPs with special needs that cannot be satisfied with local teachers; and
- The provision of small grants to individual VPs to be used in purchasing necessary capital equipment and in establishing a locally controlled loan fund for the use of graduates as individuals or in work groups to purchase the tools and supplies necessary to earn their living in their trade.

In the implementation of any of these three programs great care must be taken not to try to standardize VP programs, centralize their management, or make them too expensive or fancy for the local community to comprehend or support. One of the major factors contributing to the degree of accomplishment attrib-

uted to the VPs to date is the fact that they were developed on the initiative of local communities with local community resources and in response to local community problems. To a large extent, their continued success depends on the degree to which they are able to continue responding to local needs and priorities. If properly designed and implemented any or all of the above suggestions could contribute to strengthening rather than weakening the link between the VP and the local community.

If one were to hypothesize about the scale and cost of a comprehensive VP assistance program, the following would be a reasonable basis on which to do so assuming a concentration on one of the more densely populated districts--that is, Kisii or Kakamega.

- Provide one expatriate technician, who is a volunteer, experienced in vocational education to assist the District Community Development Officer in working with the five to eight VPs in the district;
- Provide two technicians with specifically required skills, such as leather-working and weaving, to work with individual VPs with specific needs;
- Establish a grant fund not to exceed \$5,000-\$8,000 per VP for the purchase of training equipment and providing small loans to graduates.

A program such as this, designed and implemented on a pilot basis in one district, should cost no more than \$75,000-\$100,000 per year at most and would not add to the recurrent cost burden of the central government when assistance is withdrawn at the end of the project. Rather, it would strengthen the affected VPs as self-sustaining, independent private sector entities and maximize their contributions to the development of their local communities.

Beneficiaries of this program would include not only the students and graduates of individual VPs but also the communities in which they are located. Even agribusiness firms would benefit from the increasing capability of the rural work force.

District-Level Consulting Units:

The District Trade Development Joint Loan Boards are charged with making loans to small-scale businesses within their districts. They are, however, unable to follow up effectively with loan recipients to gain a reasonable level of loan repayment or to provide their clients with technical assistance beyond "a training seminar once in a while."

The attachment of a small technical and managerial training unit to each District Trade Office could substantially enhance the ability of the Joint Loan Board to extend viable credit to small-scale light industrial and commercial activities and enhance the prospects of business success. Such a program could be staffed either by technically competent Kenyan graduates or by qualified foreign volunteers at relatively low cost. To avoid creating an additional demand on the recurrent expenditure of the ministry it will be necessary to demonstrate that the presence of such a team in the district operating an effective loan fund will generate enough income from the lending activity to pay its own operating costs.

We suggest that a pilot project be initiated in one of the densely populated districts (Kakamega or Kisii) to test this concept. The pilot project would have the following:

- One trained Kenyan and one expatriate volunteer would be attached to the Joint Loan Board of one district for a period of three years. Their scope of work would include the following characteristics:
 - Develop and implement a system for tracking and recovering outstanding loans;
 - Assist the Joint Loan Board in the evaluation of loan applicants;
 - Develop and implement mechanisms to increase the portion of total loans going to light manufacturing enterprises; and

- Develop and carry out management and technical training program for local entrepreneurs in response to specific local needs.
- A grant, based on increasing loan repayment rates, would be offered to the Joint Loan Board
- The cost of the program in one district for three years would be about \$300,000. Half of this would be required to meet personnel and operating costs, and the other half would be put into the loan fund.

Beneficiaries of the program would include all of those entrepreneurs receiving loans--an average of 150 per year--plus their families and workers and local consumers who should benefit from increased access or lower costs of basic goods and services.

We suggest that the rate of interest be increased from its current 6.5 percent to something nearer the local bank rate--about 10-12 percent. Such an increase would contribute to the viability of the program and avoid some of the problems often resulting from government subsidization of credit. As we understand it the primary problem of small business persons is not that bank credit is too expensive. It is that they do not have access to bank credit. Basically a viable private enterprise should be able to pay interest on its loans at commercial rates.

Other Project Possibilities

Other possible project interventions would include the provision of technical assistance to various credit institutions, including KIE, ICDC, and Cooperative Bank, to strengthen their loan management and recovery systems and increase support for management training in the country. More research would be required before we could make concrete suggestions about how such projects might be designed and implemented. Those interventions described earlier of course have some relevance to these two areas, but it would be wise to consider ways in which to address these two areas directly.

We feel strongly that the ability of KIE field units to provide technical and managerial assistance to its clients must be greatly increased if the substantial resources being directed to that agency are to achieve positive results. Such an objective could be served simply by funding the placement of technical personnel at specified centers for a period of three to five years until improved loan repayment performance and fees can pay for their maintenance.

Increasing Support for Private Voluntary Organizations

As discussed earlier, a number of foreign and Kenyan private voluntary organizations (PVOs) operate in western Kenya or in other parts of the country that either are now, or could be, providing managerial and technical assistance to small- and medium-scale enterprises in pursuance of a generalized rural industrialization program.

A modest amount of support for these agencies in the form of grants or contracts, coupled with some reorientation of their programs to address directly the problems of specific districts, could have a major impact in improving the managerial efficiency of productive enterprises in western Kenya. The organizations that should be considered in such a program include the Partnership for Productivity Foundation; Technoserve, Inc.; CORAT Africa; the Institute for International Development, Inc.; the National Christian Council of Kenya; the Diocese of Maseno South; and other local Catholic and Protestant organizations.

Working with organizations such as these, which are already present and operational in the country, it will be possible to test several possible types of intervention strategies on a pilot basis at relatively low cost. Each organization has its own preferred methodology that it seeks to implement as broadly as

possible. For the sake of this program it may be possible to define clearly those methodologies and apply them intensively at the district level to test and refine them.

It is also possible that the PVOs could participate in some of the other interventions discussed above. For example, a PVO such as Technoserve or IIDI might be contracted to provide technical assistance to the Venture Capital/Technical Assistance Unit. PVOs such as Partnership for Productivity or the National Christian Council of Kenya might participate in the program to assist the Village Polytechnics. Any of several of these agencies might assist in the establishment of district level consulting units and CORAT or others might participate in the expansion of mid- and high-level management training programs.

The contract team views the support of PVOs more as a vehicle for the implementation of project interventions than as an intervention in itself. Thus the cost and impact related to working with the PVOs are dependent on the use to which they are put and the results that the GOK or donors hope to achieve.

In conclusion, it is necessary to emphasize that this team was mandated to cover a great deal of ground (both figuratively and literally) in a very short time. Inevitably, we were not able to pursue interesting or important lines of inquiry as far as we would have liked. It is our opinion, based on our field research and experience, that the types of interventions suggested above could be very useful in promoting the industrialization in the districts we were asked to visit. Any of these would of course require a great deal of further research and refinement before the commitment of project funds could be justified.

FOOTNOTES

1. Ian Livingstone, Rural Development, Employment and Incomes in Kenya (Addis Ababa: International Labour Office, 1981), p. 15.

2. Ibid., p. 35.
3. See OYugi Aseto's paper, "Employment and Earning Disparity" in Natural Resources and the Development of Lake Victoria Basin of Kenya, University of Nairobi (IDS), 1979, pp. 50-67 for data on labour force growth and utilization in the region.
4. Interviews with the directors and staff members of three Village Polytechnicians in Busia and Kisii districts.

CHAPTER SIX

ALTERNATIVE MODELS FOR PROMOTING
ECONOMIC DEVELOPMENT IN WESTERN KENYA

In Chapters four and five we have suggested development initiatives that would contribute to the economic development of the four districts involved in this study. They are suggested in response to specific problems in the districts and to apparent gaps that exist in the provision of productive goods and services to the rural population.

We have tried to be cost concious and realistic in terms of the long-term support that can be expected from the national budget. Most of the proposed project initiatives could be implemented without substantially increasing recurrent expenditures by the GOK in the target districts. The question of how to organize these projects in a cost-effective manner will be addressed in this chapter.

We recognize that there is no single correct organizational model for development programs such as those we have suggested. One way to examine the various organizational options is in terms of their target area and institutional host. In this case, we are faced with the following five general alternatives:

<u>Geographical Focus</u>	<u>Host Institutions</u>
National	Line Ministries, Center
Regional	Regional Development Authorities and/or Parastatal Institutions
Provincial	Provincial Government
District	District Officials
Various	Non-Governmental Organizations

Each of these alternatives, of course, has positive and negative factors associated with it. Each can serve as an host to some type of development project, depending upon such factors as the nature of the project, the types of services and support demanded of government, and its geographical focus and scope.

Our study was most directly concerned with district-level conditions and development opportunities. This was a key concern of the GOK, as indicated in the scope of work. It should not be surprising, then, that most of the project opportunities we have identified are focused at the district level and can be most effectively implemented at that level.

As a general principle, we believe that development projects should be implemented and managed as closely as possible to the population that will most directly benefit from them. This is so that the full participation of the beneficiaries can be generated, and operational feedback can be quickly and efficiently gathered and used to readjust program components and improve management decision-making capability.

Most, but not all, of the project alternatives we have suggested can be most appropriately implemented at the district level. In some instances, however, economies of scale or other efficiencies dictate that projects can most effectively be operated at the provincial regional or national levels. All levels of government organization, of course, have some role to play in most of the proposed efforts, although some are probably best implemented by private sector agencies and organizations, with government playing a minimal role.

In general, we feel that a multi-pronged approach is best--one which makes use of different agencies in response to different problems.

Line Ministry Projects

In Kenya the line ministry officials in Nairobi are very important in either directly or indirectly determining the day-to-day activities of ministry personnel in the field. Field personnel tend to look for guidance more up through the lines of their own ministry to Nairobi than they do to officers and committees outside their own ministries working at the same level.

While it is necessary for them to look to Nairobi for policy guidance, technical assistance, and predictable levels of budgetary support, an overemphasis on these vertical channels detracts from the ability of district level officials to coordinate effectively the use of overall government resources being applied in a single jurisdiction and implement an integrated district development program.

We suggest that the most productive role that the central government (line ministries) can play in the development of these four districts is in the area of policy formulation and revision and in resource (human and financial) allocation. A number of policy suggestions have been mentioned earlier; these can be put into effect only at the national level. Those of the greatest general concern include the following:

- Raising commodity prices to levels consistent with world market prices;
- Increasing the role of the private sector in the supply of production inputs and marketing;
- Increasing the degree of integration among the Ministry of Agriculture's research, training, and extension programs, and increasing the emphasis given to soils research; and
- Decreasing emphasis on the provision of credit in favor of increasing the availability of subsidized technical assistance and, in some instances, production inputs.

The first two of these policies have, in fact, already been adopted by the GOK, as reflected in the new agricultural commodity prices announced by President Moi in December 1981 and in various statements in the current Five Year Development Plan and the National Food Policy statement. They cannot yet be said to have been fully implemented, but they do show the intention of the GOK to move in those directions.

The third policy issue, that of increasing the level of integration among the various agriculture-related research, training and extension arms, is also one that should be easily accepted in principle. Its implementation will be more difficult, however, depending on the resolution of significant management problems that have been compounded by the proliferation of ministries and government agencies in recent years. Such integration, to be more effective, must extend beyond the boundaries of the Ministry of Agriculture to encompass certain functions that now fall under the Ministry of Livestock Development and the Forestry Department of the Ministry of Natural Resources.

The fourth major policy issue is likely to be pose much more difficult choices. Once an economy has become dependent on subsidized credit, which in many cases is viewed as a government grant rather than credit at all, it is very difficult to remove that credit. We feel that it is very important that this step be taken, however, if the limited funds available for the development of these four districts are to be effectively used in the interest of the greatest number of people.

The central line ministries must also, of course, maintain responsibility for the provision and maintenance of qualified staff at all levels. The rapid turnover of government field staff in most locations is a definite constraint on the efficient provision of government services. Officers are frequently transferred just at the time when their effectiveness should be highest:

that is, when they have become thoroughly familiar with their area and its people. Successful management efforts to reduce this rate of turnover could have a very beneficial impact on the effectiveness of the services being provided under current programs, as well as with any new programs that may be started.

Regional Projects

Where the development problem being responded to has a definite regional nature, or where the development of a needed facility or service for the use of a single district would not be cost effective, a subnational authority should perhaps bear primary responsibility for program implementation. Of course the major regional organization in western Kenya is the Lake Basin Development Authority, the strengths and weaknesses of which were discussed briefly in Chapter Three. Key problem areas where regional coordination is a necessity include watershed management, protection and management of forest reserves, erosion control, and the control of certain livestock diseases such as those carried by the tsetse fly. The LBDA has been specifically charged with some of these responsibilities already or is taking the initiative in coordinating the response of other agencies to specific problems, such as tsetse control in the Lambwe Valley.

The LBDA might also be the logical host for some of the other agricultural development initiatives proposed in Chapter Four. It might be more efficient, for instance, to ask the LBDA to establish and manage a well-equipped soil chemistry laboratory for the benefit of the entire region than to establish two or more smaller laboratories at the provincial level or below. Certain agricultural research functions might also be most effectively carried out at the regional level, coordinated by the LBDA, as could efforts to strengthen the lake fishing activities in Busia and South Nyanza. In general, however, we prefer to see field research and extension activities managed and conducted at the district level.

The major initiative suggested for the development of rural agribusiness enterprises should also be coordinated at the regional level. The proposed Venture Capital/Technical Assistance Unit should be made operational throughout Nyanza and Western provinces to maximize the investment opportunities available and to make the most effective use of available capital and natural and agricultural resources. While it is possible that this program could be attached to the LBDA as well, we think that it is preferable that it be made a semi-autonomous operating arm of the Industrial and Commercial Development Corporation office in Kisumu or be set up as an independent agency altogether, ideally with joint public and private sector financing.

Provincial Projects

The provincial level of government primarily holds management and administration responsibilities rather than operational functions. In simplified terms, its functions are basically to interpret policy directives from the center for field personnel at the district level and below and to gather and analyze field data for senior officials at the center to feed into the policy making process.

Provincial officials are also responsible for the establishment of province-level priorities and for the management of funds and personnel assigned to the province. While we do not see the province as the preferred implementation focus for any of the project initiatives we have suggested, the officers at the provincial headquarters will certainly have to play a major role in the integration of the various agricultural research, training, and extension activities.

District Projects

It is at the district level that we suggest most of the proposed projects be developed and managed. We make this suggestion for several reasons:

- The field operational arms of government are controlled most directly at the district level;
- The district is already a major focus of the government's decentralization activities, as evidenced by the existence and operations of the District Development Committee, the District Food Committees, and the Rural Development Funds; and
- The district is a unit of manageable size in terms of geography and demographics.

District-level development activities can be approached in two basic ways. One is through a series of discrete projects each operating with its own staff and budget through line ministry channels. The other is through a centrally managed integrated district development program. While the former might be considered most appropriate in certain cases where specific, limited problems are to be addressed and other areas do not require additional or special attention, in this case we recommend that the second alternative be selected. When properly managed and carried out, an integrated district development program should yield results that not only contribute to the achievement of immediate goals in terms of increased productivity and incomes, but also develop a solid basis for continuing such development once outside assistance is withdrawn.

The history of efforts to plan and implement development initiatives at the district level in Kenya suggests reasons for both caution and encouragement. While district planning efforts to date have failed to produce meaningful development

plans in several key respects, a useful process has been initiated, and efforts are under way to improve the means by which these plans are developed and integrated into the national development plans. In the past, the District Development Committee was given no prescribed resource constraints or budgetary guidelines. Without these limitations being specified, the DDC had no incentive to develop strategies or set development priorities. The natural course was to present the central government with a shopping list of projects from which to choose. And, for the most part, this is what was done.

While falling short of the stringent technical standards for planning, the methods employed at the district level up to now suggest that when resources are put at the district level, as is the case with the Rural Development Funds, two positive results occur:

- Political and administrative energies will be invested advocating, scrutinizing, and implementing projects of importance to local residents of the district; and
- Efforts will be made to allocate resources among competing needs in a systematic and rational manner.

Our team found that the latest district development plans were already the most useful documents available as a collection of basic data and a statement of local problems and development needs and possibilities. The central government is altering its procedures to render district planning more effective part of the next national planning exercise. It is producing a set of sector plan targets that have been disaggregated at the district level. This innovation will help to provide a framework within which meaningful district planning can take place.

This initiative, together with the increasing experience and ability of the district planning teams and temporary assistance from the advisers attached to an integrated district development project, should substantially increase the usefulness and impact of the district planning process.

Another possible constraint to the effective administration of development projects at the district level is that the districts have previously proven to be ineffective in terms of project management. District-level government officers have little power to hire, fire, promote, or discipline line ministry personnel. Similarly, they have little power over the implementation of development projects, most of which are controlled, funded, and managed from the center.

Experience with the Machakos Integrated Development Project offers encouragement on this point. There, with the provision of external technical and financial assistance, line ministry personnel have been able to plan and implement effectively a district development program, making use of locally controlled resources. Other integrated projects were being planned for two districts in Coast Province at the time of our study. These two projects were to be supported by IFAD.

We suggest that two integrated district development projects be implemented in western Kenya--one in a high population density district and one in a low population density district. These would be relatively modest projects with the following four general purposes:

- To increase the capacity of districts to plan and implement economic development activities;
- To follow through on initiatives suggested in this paper to increase production and incomes in the districts;

- To increase the effectiveness and impact of current government resources being allocated to the districts by improving the planning and management functions and making maximum use of interministerial planning committees; and
- To serve as prototypes for decentralized development programs in other districts.

The projects should be programmed for a minimum of four to five years with annual budgets of approximately \$1 million per district per year. About 40 percent of the annual budget allocation would be allocated to the provision of external technical assistance, with the balance to be used for the development of operating subprojects. In most cases these funds should be used for the provision of long-term capital assets rather than for the hiring of local staff. One of the basic principles we suggest be followed is that these projects, to the maximum extent possible, make use of existing government supplied personnel and other resources.

We suggest that three expatriate advisers be placed in each district with the following specialties:

- Regional planning and management;
- Agricultural research and extension; and
- Rural industry development.

They would be supplemented as required by short-term specialists in specific problem areas. The advisers would work as counterparts of the relevant district-level line ministry officials as well as with the DDC as a whole. Their primary function would be to improve the effectiveness of district level development programs, based primarily on the use of existing financial and human resources. They would work with their counterparts to integrate the activities of various line ministries and depart-

ments and gain greater control over the governmental activities undertaken in the district. They would seek to upgrade the planning and management skills of their counterparts and others by a combination of on-the-job training (for example, working together on specific activities) and seminars.

More could be accomplished in these districts if larger amounts of external financial and technical resources were supplied. It is unlikely that external donors would be able or willing to replicate such programs broadly, however, and it is very likely that they would ultimately leave the GOK with the unhappy choice of either scaling down new and productive activities or increasing recurrent budget allocations to the district to maintain them at the expense of other national priorities.

The basic elements of the integrated agricultural research, training, and extension program would be managed at this level as would the program attached to the District Trade Office charged with the promotion of small scale enterprises in the district. The project would influence other projects in the district as well, including those related to family planning, infrastructure development, and the development planning process itself.

Nongovernmental Projects

As was mentioned earlier, a number of nongovernmental organizations that either are, or could be, providing useful service in the promotion of increased agricultural and rural productivity. Support of these activities, and making them part of the overall district planning effort, can yield major benefits. These organizations are frequently more effective than government in bringing about changes in production practices and economic behavior in small areas with relatively well-defined populations.

While some of the non-governmental organization (NGO) programs might operate most efficiently at the provincial or regional level, we feel that those who specialize in grass-roots development activities can be most effective when concentrating their efforts at the district level or below. In other cases they might provide assistance to government-sponsored programs where they have special expertise or insights. A key principle in the supporting of NGOs is that their activities in a district should be coordinated right along with all of the government-sponsored services. This can be a bit difficult to achieve as many of the NGOs guard their "privateness" jealously and resist government efforts to interfere in their operations. It can be accomplished, however, if they are made a part of the planning and coordination process and recognized as key participants in the development process.

ANNEX A

TERMS OF REFERENCE

Background

USAID has had Western Kenya as one of its two geographic foci for development programs. The studies described herein are being undertaken to address key issues identified by USAID and the Ministry of Planning and Economic Development. Kenya has a very limited arable land, has recently faced food shortages, and suffers high levels of unemployment and underemployment. At the same time there exists sub-optimum use of existing resources, including land and labor. Internal markets are expanding and there is scope to increase agriculture processing and expand rural industries. These studies are designed to suggest economic development approaches which will result in expanded production and contribute to economic growth.

ARTICLE I - TITLE

Program Development Support Funds 698-0135 (Western Kenya Studies).

ARTICLE II - OBJECTIVE

To undertake studies designed to suggest economic development approaches which will result in expanded production and contribute to economic growth.

ARTICLE III - STATEMENT OF WORK

A. First Study

The first study shall focus on Kisii and Kakamega Districts which are typified by dense population on high or medium potential land divided into extremely small

holdings (about 1.9 ha. per farm unit in Kisii). The land base is inadequate to absorb all of the rural population, resulting in landlessness and unemployment. The net natural population increase rate is high (estimated 3.95 percent per year for Kisii), compounding the problem of population pressures on the land.

The first study shall analyze possible project and policy interventions designed to reduce the pressure on agriculture land, increase employment opportunities, and stop the degradation of existing land/water resources. The topics to be investigated shall include:

1. Agricultural Production: Intensification of agricultural cropping systems by multiple cropping, increased use of fertilized, pesticides, and herbicides along with the potential adoption of higher value crops (taking note of the trade-offs between food and non-food crops). Assess the marketing, transport, processing and storage infrastructure and determine requirements for handling additional surplus production (including internal and external demand analysis).

Using information gathered and the District Development Plan make recommendations as to which specific agricultural development projects look most promising. As current farm practices are leading to degradation of existing soil and water resources, appropriate conservation (possibly as project interventions) measures should be considered in making recommendations.

2. Rural Enterprises: Review pertinent literature and data sources (i.e. district development plans, interviews with local officials and entrepreneurs, etc.) concerning the social, economic, and institutional conditions in the districts that are likely to favor or impede an

agri-business/small scale enterprise project. Suggest types of products produced by agri-business which could link into different parts of the primary agricultural sector such as furniture making to forestry, fruit and vegetable processing to intensive agriculture, milling and baking to grain production, commercialized charcoal production to forestry, etc. In this context examine the potential for a market centers development approach.

More specific issues to be addressed in agri-business/rural enterprise development include the following:

- a. What local industries exist and what are the constraints/potentials for expansion.
- b. Examine the institutional support structures for agri-business and rural enterprise such as credit, technical services and define opportunities and limitations.
- c. Assess production and internal and external market potentials for a range of possible labor intensive enterprises.
- d. Review government policy and discuss possible disincentives and promotional policies which would encourage agricultural processing, marketing and local crafts and industry.
- e. Describe district infrastructure in roads, water and power and determine if they limit reasonable expansion of activities.
- g. Discuss availability of skilled and semi-skilled labor and the adequacy of the training infrastructure (e.g. Kenya Polytechnic, Harambee Institute, etc.), and the present wage structure.

- h. Recommend types of enterprises which would have a favorable chance at profitability and would attract private sector involvement.
- i. Include discussion of other donor activities, i.e. IBRD, KIE, Rural Industrial Development Centers and GOK (Ministry of Commerce and Industry) activities.

The output of the study shall be an analytical report on the problems and possible solutions, with proposals for the development of specific action-oriented programs.

B. Second Study

The second study shall focus on Busia and South Nyanza Districts. These areas are typified by high quality agricultural land with individual farm holdings large enough to provide adequate incomes but with land use and cultivation practices that are non-optimal and which result in substantial loss of potential production. Much good land is presently under-utilized or completely idle. In Busia, the total agricultural area represents about 1.4 ha. per person, compared with 0.3 ha per person in Kisii.

The purpose of the second study is to investigate potential strategies for the development of these areas that will increase the level of agricultural output and absorption of labor through full and intensive development of the land. Topics to be investigated shall include:

1. Agricultural Production: Investigate why the land resources in these areas are under utilized. Study should begin with a review of constraints caused by lack of roads, markets, processing and storage

facilities. Assess the availability of credit, modern inputs and profitable production practices and services needed to facilitate intensive land use. In addition to crop production examine the potential for expanded livestock production (beef and dairy) and assess the constraints imposed by the present limited market outlets and make recommendations for expansion.

In specific areas examine the problems of land preparation and weed control which are likely limiting intensive production as well as localized water and flood control or drainage problems. Consider the current state of mechanization and discuss appropriate strategies for the area.

Conduct a brief review of agri-business and rural enterprise potentials similar to that suggested for Study No. 1.

What are GOK and other donors doing now in these areas? What is the role of the Lake Basin Development Authority? What specific agricultural development projects look most promising and should be further investigated?

The output of the study shall be an analytical report on the problems and possible solutions leading to increased agriculture production with proposals for the development of specific action-oriented programs.

ARTICLE IV - REPORTS

The Contractor shall provide a brief report midway through each study to the USAID Director and the Director, Rural Planning Division stating progress to date and any anticipated problems in implementing the studies.

A final report for each of the two study areas shall be submitted in (5) five copies to the USAID Director and the Director, Rural Planning Division prior to departure from Kenya.

ARTICLE V - RELATIONSHIPS AND RESPONSIBILITIES

The contractor shall receive technical directions from the USAID Director. The Contractor's specialist shall work with USAID and the Ministry of Economic Planning and Development (MEPD) with cooperation from the Technical Assistance Pool of the Ministry of Agriculture.

ARTICLE VI - TERM OF PERFORMANCE

The desired starting date is October 28, 1981 and the estimated completion date is January 15, 1982.

ANNEX B

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ANNEX C

LIST OF CONTACTS

Ministry of Economic Planning and Development
Ministry of Agriculture
Ministry of Livestock Development
Ministry of Transport and Communications
Ministry of Cooperative Development
Ministry of Commerce
Ministry of Water Development
Ministry of Environment and Natural Resources

- . Fisheries Department
- . Forestry Department
- . Wildlife Department

Ministry of Labor
Ministry of Culture and Social Services
National Cereals and Produce Marketing Board
Cotton and Lint Seed Marketing Board
Kenya Farmers' Association
Lake Basin Development Authority
Kenya Industrial Estates
Industrial and Commercial Development Corporation
Industrial Development Bank
Agricultural Finance Corporation
Cooperative Bank of Kenya
Kenya Commercial Bank
Barclay's Bank
Standard Bank
Partnership for Productivity Foundation
Technoserve, Inc.
CORAT International
British American Tobacco Company
Homa Line Company
World Bank
Kenya Seed Company, Ltd.
Kitale Industries, Ltd.
Kitale National Agricultural Research Station
Food Policy Research Institute

ANNEX D
SITE VISITATIONS

Agricultural Research Stations

- Busia
- Kisii
- Kakamega
- South Nyanza
- Kitale

Village Polytechnics

- . Busia District (2)
- . Kisii District (1)

Kenya Industrial Estates

- . Kisumu
- . Kakamega
- . Kisii
- . Homa Bay

National Cereals and Produce Marketing Board

- . Kisumu
- . Homa Bay

Partnership for Productivity Foundation

- . Checkalini Project

Western Province Agricultural Show

Mashambani Industries, Ltd. (Gambogi)

Homa Lime Company Ltd. (Muhoroni)

Private Farms

Tabaca Soapstone Carvers and Quarry

Fishing Cooperatives

- . Homa Bay
- . Kendy Bay

Luanda Cooperative Union

Victoria Cooperative Union