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AMIS Project)

August 1989

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Ms. Christopher Mock, private sector specialist, conducted the research and wrote this report over a two-month period in Chad and Washington, D.C. She accepts full responsibility for any errors or omissions. Ms. Mock has a background in agricultural economics and management, with specific interest in agribusiness and small business development.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACP	Africa/Caribbean/Pacific regions
A.I.D.	U.S. Agency for International Development
BET	Bourkou-Ennedi-Tibetsi
BIEP	Bureau Interministériel d'Etudes et de Programmation
CCCE	Caisse Centrale de Coopération Economique
CFAF	Franc de la Communauté Financière Africaine
CILSS	Comité Inter-Etat de Lutte contre la Sécheresse au Sahel
CIP	Commodity Import Program
EIB	European Investment Bank
FAO	Food and Agriculture Organization, United Nations
GDP	Gross domestic product
IBRD	International Bank for Reconstruction and Development
ONADEH	Office National du Développement de l'Horticulture
ONC	Office National de Céréales
ONDR	Office National du Développement Rural
OPIT	Office de Promotion Industrielle du Tchad
ORT	Organization for Rehabilitation and Training
OXFAM	Oxford Committee on Famine
PADS	Programme des Actions pour le Développement Social
PID	Project Identification Document
PVO	Private voluntary organization
RSA	Rehabilitation du Secteur Agricole
SAP	Système d'Alerte Précoce
SAR	Système d'Alerte Rapide
SDA	Social dimensions of adjustment
SECADEV	Secours Catholique au Développement
SME	Small- and medium-scale enterprise
SODELAC	Société de Développement du Lac
SONAPA	Société Nationale de Production Animale
UNACOT	Union Nationale des Commerçants du Tchad
UNIDO	United Nations Industrial Development Organization
UNDP	United Nations Development Programme
USAID	U.S. Agency for International Development (Mission)
VITA	Volunteers in Technical Assistance

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I. INTRODUCTION

Overview of the Agricultural Sector

Chad's agricultural sector is the dominant sector in the country's economy: agricultural activities account for approximately 85 percent of employment and 44 percent of the GDP. The economy is heavily dependent on the cotton subsector, which in 1984, before the current 'cotton crisis', generated 20 percent of government tax revenues and 66 percent of industrial turnover. Cereals constitute the principal foodcrops: sorghum, pearl millet, and berbere accounted for 87 percent of the 1987 cereals harvest, while rice, maize, and wheat accounted for the remaining 13 percent. Other important food products include a variety of fruits and vegetables, manioc and other tubers, sesame, sugarcane, meat and milk, herbs and spices, fish, and cowpeas, groundnuts, and other legumes.

Chad's principal exports include cotton and livestock, which together accounted for 83 percent of 1984-86 export value. Other agricultural exports include gum arabic, karité, onions, garlic, hot peppers, melons, peanuts, cooking oil, spices, dried hibiscus flowers, and squash seeds. The principal agricultural import is cereals, although various other products are also imported. There are no recent reliable data on most agricultural exports (aside from cotton, gum arabic, and a few minor products) or imports, since most external trade is in relatively small quantities with neighboring countries and often eludes government statistical accounting.

While most of Chad's agricultural output is produced under rainfed conditions (particularly cotton, millet, and sorghum), some products are cultivated under irrigation (mainly fruits, vegetables, and rice). According to the Food and Agriculture Organization (FAO), Chad has the largest irrigation potential in the Sahel; although in 1987 about 4,000-5,000 hectares of land were under irrigation, an additional 1.2 million hectares are thought to be potentially irrigable. In recent years, the government has placed increased emphasis in its agricultural development programs on the development of small-scale irrigated perimeters using pumps and traditional water management techniques.

The government's 1987-90 strategy for the agricultural sector emphasized four principal themes: to diversify crop production and to increase marketed surplus of both domestic food and export crops; to assure food security through food self-sufficiency and investments in irrigation to reduce supply variability; to develop more fully the livestock subsector; and to increase the efficiency of the cotton subsector. The promotion of a more competitive private transport sector was also emphasized as an important element in stimulating domestic trade and increasing agricultural production.¹

The Agricultural Marketing Problem

It is widely recognized that weak or nonexistent agricultural marketing infrastructure and fragmented, inefficient marketing systems not only have acted as a disincentive to increased agricultural production, but also have exacerbated Chad's apparently chronic problem of localized food insecurity. Recent government and donor analyses of Chadian economic development priorities repeatedly emphasize the need to strengthen agricultural marketing channels and systems as a prerequisite for agricultural development, food self-sufficiency, and national food security. For example, a 1989 IBRD analysis observed that

[in] normal to good rainfall years, . . . when aggregate production appears to achieve self-sufficiency targets, but there are specific regions and villages where food is unavailable or inaccessible due to insufficient purchasing power. . . poor market integration results in mounting surpluses, the disappearance of market outlets in surplus areas and a sharp and rapid drop in prices. Chad faces a chronic problem: major deficits in food crop production in drought years and in other years, surpluses which under present conditions are not absorbed by the market.²

Similarly, a 1988 A.I.D. analysis identified marketing as a principal constraint on increased agricultural production:

The agriculture sector's contribution to GDP does not significantly increase in years of good harvest because of the inability to market the excess production. A major part of the problem is that Chad does not have an integrated market. Instead there are a series of fragmented markets, with

1. The materials in this section were derived principally from IBRD 1987 (Chad: Economic Situation) and 1987 (Chad: Agriculture) and 1989 (Food Security).

2. IBRD 1989 (Chad: Food Security), p. 3.

N'Djamena being the largest. Surpluses can be found in one area while another has a scarcity of the same product. . . [This] lead[s] to an extreme geographical and temporal variability in the price of agricultural products. High transport costs often eliminate any margin that an entrepreneur might gain by taking advantage of the large price differences among different markets. . . The increased costs of goods that result from transportation inefficiencies have a significant dampening effect on demand in a country where the consumer has very limited purchasing power, and it also decreases the competitiveness of exports.³

Finally, in a comprehensive study concerning the rehabilitation of the agricultural sector, government and consultant analysts summarized the principal constraint on rehabilitation as follows: "In general, marketing is very underdeveloped and inefficient, and constitutes a fundamental brake on the development of the country and the agricultural sector."⁴

In response to the increasing concern about weaknesses in Chad's agricultural marketing systems, the government has given marketing issues higher priority in its strategy documents for the preparation of the upcoming 1989-93 economic development plan.⁵ In addition, some donors, including A.I.D., and private voluntary organizations (PVOs) are planning to initiate or to increase their activities in agricultural marketing.

The Agribusiness Systems Context of Agricultural Marketing

Experts define agricultural marketing as the series of functions or services which not only transfer agricultural commodities from the farm level to the ultimate consumption point, but also deliver necessary inputs to the farmer and to the providers of the marketing services. J.P. Abbott and J.C. Makeham define the marketing process in the following way:

The marketing of agricultural products begins at the farm when the farmer plans his production to meet specific demands and market prospects. . . transport is [subsequently] required to bring the product to the [place of consumption]. . . agricultural production is generally seasonal while consumption is regular and continuous throughout the year. Thus storage is required to adjust supply to demand. . . [The] product. . . must be sorted, cleaned, and processed in various ways, and must be presented to the

3. A.I.D. 1988. p. 10.

4. Republique du Tchad, Banque Mondiale, et Association Momentanee 1988, p. 110. Translated from original French by this author.

5. IBRD 1989 (Chad: Food Securities), p. 3.

consumer in convenient quantities for sale. . . Some financial arrangement must be made to cover all the various stages until the retailer sells the product to the consumer. It is marketing which provides these services between production and consumption. . . Agricultural marketing also includes the selling to farmers of supplies needed for production.⁶

R.A. Goldberg and J.H. Davis define the sequence of functions from farm input production and delivery through to ultimate product consumption as components of an agribusiness system, or, for a particular commodity, components of a commodity system. The functions which these systems comprise include not only those functions related to the production and disposition of the physical commodities, but also supporting and coordinating functions which affect the system's operations, such as financing, extension support, government regulation, and contracting mechanisms.⁷ Figure 1 diagrams the principal functions in an agribusiness system, and Figure 2 presents a simplified flowchart for a typical commodity system, as applied to several specific Chadian commodities.

The multiple functions within an agribusiness or commodity system are highly interrelated; each may affect the performance of other functions and ultimately the performance of the entire system. An apparent weakness or failure in one particular component may in fact be caused by weakness or failure in another distinct, yet interdependent component. Therefore in examining agricultural marketing systems in a particular context, it is imperative to understand the operations, interrelationship, and impact of each of the other components or functions which affect marketing activities. Further, programs aimed at the development of marketing systems must necessarily include measures to strengthen other distinct components, the operations of which directly or indirectly affect the performance of marketing systems.

The Purpose and Scope of this Assessment

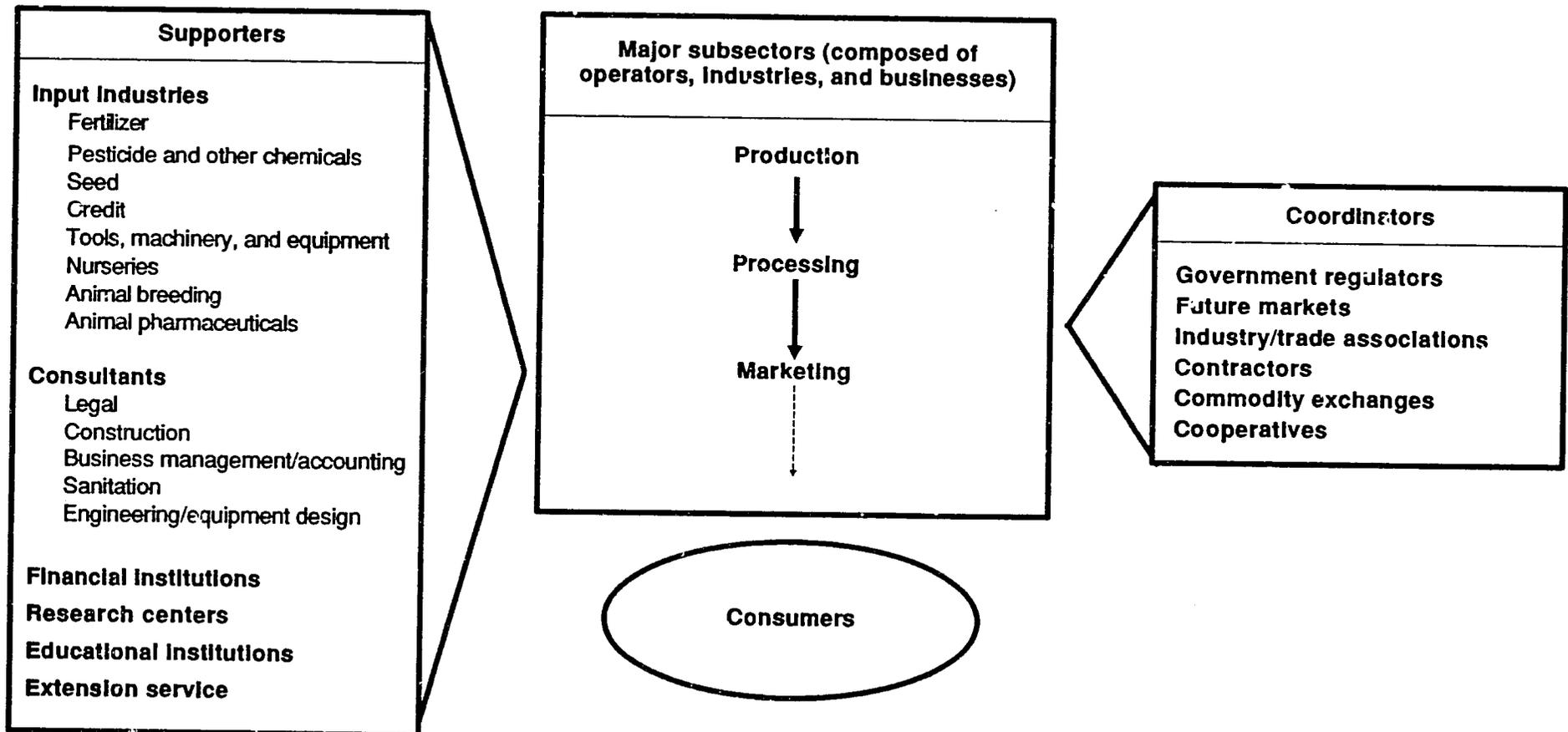
Purpose

USAID/N'Djamena is planning to undertake the identification and development of a new agricultural project with a major marketing component in mid-1989. Prior to the initiation of these activities, the Mission requested that an assessment be performed of the literature and documentation on

6. The original (1957) definition of agribusiness by Ray Goldberg and John Davis, as quoted in Watts et al. 1987, p. 66.

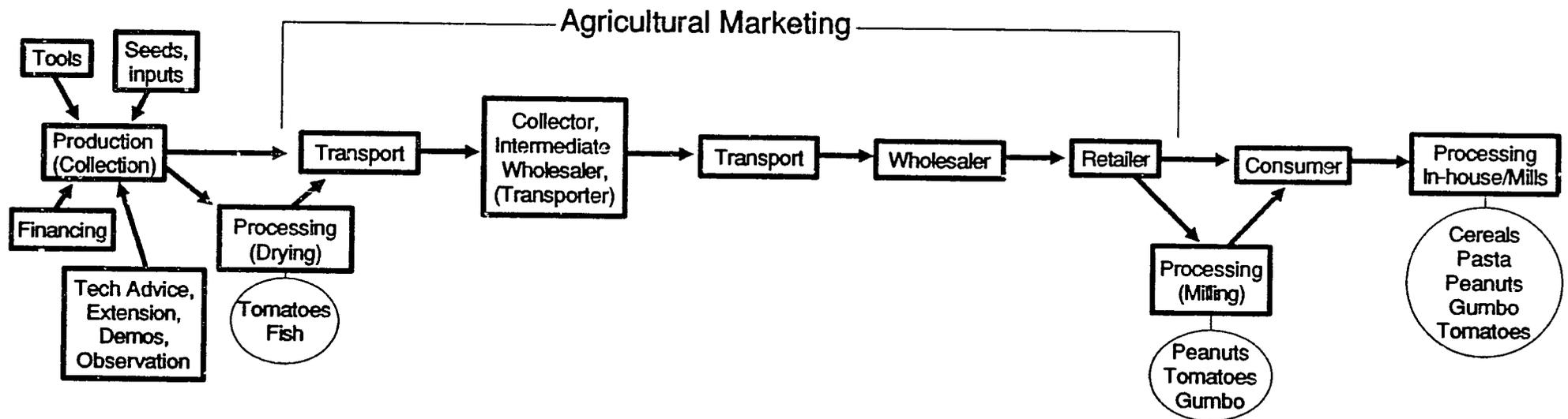
7. Goldberg and Davis 1967.

Figure 1. Principal Functions in an Agribusiness System



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**Figure 2. Simplified Commodity System
Applied Loosely to Several Chadian Commodities**



Note: Chart depicts functions, not individuals. Several functions for different commodities may be performed simultaneously by a single individual. (This appears to be the usual case in Chad, i.e., producer of several crops/commercant/miller.)

agricultural marketing in Chad, the functioning of the marketing systems for different commodities, the principal constraints on marketing activities, and the most promising opportunities in marketing. The Mission also requested that, based on this assessment, a strategy for the new marketing sub-project be conceptualized, and that any additional analyses required for the project identification process be defined and elaborated. The detailed scope of work for this assessment is provided in Appendix C.

Scope and Methodology

The assessment was performed by a two-person team which included an agricultural marketing specialist and a private sector marketing specialist. The agricultural marketing specialist, who conducted six weeks of research in Chad and an additional five days of research in Washington, D.C., performed a comprehensive literature review, as well as an analysis focusing on the views and activities of public sector organizations (primarily the Government of Chad and donor institutions) and PVOs operating in Chad. These materials have been presented in a separate document.

This report, based on 1 month of research in Chad and 12 days in Washington, D.C., provides a private sector perspective of the issues under consideration. The analysis and conclusions are derived from the following sources: (1) a review of most of the available literature on agricultural production, storage, marketing, and processing in Chad and selected materials concerning agricultural marketing in other Sahelian countries; (2) interviews with selected public sector officials, including representatives of the Government of Chad, IBRD, CILSS, U.S. Peace Corps, and USAID/N'Djamena; (3) interviews with private sector representatives, including farmers, agricultural wholesalers and retailers, transporters, grain storage operators, processors of agricultural products, exporters, importers, prospective marketing and processing entrepreneurs, and consumers; (4) interviews with PVO representatives and technicians involved in agricultural production and marketing activities in Chad; and (5) site visits to agricultural production, storage, processing, wholesaling, and retailing facilities in N'Djamena and Bongor, and in 13 other towns in western and southwestern Chad. A list of individuals contacted and sites visited is provided in Appendix A.

In performing this analysis, a modified commodity systems approach was employed initially, in which various commodity subsectors were assessed extremely rapidly through interviews, site visits, and literature reviews. (According to Mission directive, two important commodity subsectors, cotton and livestock, were not examined because they are already being addressed in major projects.) As common constraints and needs were identified, they, too, were investigated as potential areas to be addressed in the PID process. The deteriorated quality of Chad's road system was not analyzed, since A.I.D. is already contributing to a major program of road rehabilitation.

II. SUGGESTED STRATEGY FOR DEVELOPING CHADIAN AGRICULTURAL MARKETING SYSTEMS

In formulating a strategy for developing agricultural marketing systems in Chad, it is recommended that an approach which incorporates the following features be considered.

Conformance with Multiple Government and A.I.D. Economic and Agricultural Priorities: A Cross-commodity Approach

The Chadian government's economic and agricultural objectives and priorities which relate to agricultural marketing activities may be briefly outlined as follows: (1) national and regional food security, which will depend in part on increased inter- and intra-regional trade; (2) food self-sufficiency, which implies import substitution through increased agricultural production; (3) agricultural diversification, including the promotion of both rainfed and irrigated crops; (4) export promotion, particularly in view of foreign exchange and revenue losses due to the 'cotton crisis'; (5) investment promotion, which is constrained by a shortage of capital that is due partly to the destruction resulting from the past two decades of civil disorder and warfare; and (6) rehabilitation of the private sector, particularly small- and medium-scale enterprises.⁸

A.I.D.'s strategy for development assistance to Chad, a strategy that has been designed to support government objectives, focuses on the promotion of sustained economic development, with an emphasis on the development of the dominant sector, agriculture, including increased food security and the stimulation of production through the expanded use of appropriate technologies, agricultural diversification, and the promotion of marketing opportunities for agricultural produce. A.I.D.'s program rationale also stresses the importance of support to the private sector, which in Chad is composed

8. From IBRD 1987 (Chad: Agriculture) and A.I.D. 1988 (Annual Budget Submission).

largely of small- and medium-scale businesses, including agricultural enterprises (farms).⁹

Thus both the government and A.I.D. have formulated multiple economic and agricultural priorities which do not emphasize particular commodity subsectors, but focus on goals and actions that will promote several important subsectors simultaneously. These strategies conform to the approach advocated by Eliot Berg, who recently recommended that public sector investment programs attempt not to identify growth commodities and industries,

... [for] the record is not very good here, but to promote a policy environment which will allow market forces to make the identification ... Public investments should be oriented towards interventions which can support a wide range of commodities, as it is difficult to know in advance which one will emerge as having the greatest advantage.¹⁰

Therefore it is recommended that the new agricultural marketing activities not explicitly address particular commodity subsectors; instead the focus should be directed at existing and potential markets, with actions designed to promote the delivery of the array of crops which can presently or potentially be absorbed by these markets. Project actions should focus on cross-cutting interventions which can affect numerous commodity subsectors, with the identification of the particular subsectors left to the experience, skills, and ingenuity of private sector entrepreneurs.

Chad's principal markets for agricultural commodities are as follows:

- The mass market of low-income urban and rural consumers who purchase a relatively narrow range of staple products, mainly various cereals, vegetables, legumes, and oils, with small quantities of meat and fish.
- The medium- and high-income markets for a wide range of premium agricultural products; the main market in this category is N'Djamena, but smaller markets exist in the other cities and towns and in areas with concentrations of expatriates, such as military facilities.

9. A.I.D. 1988 (Annual Budget Submission).

10. A.I.D. 1989 (African Development Bank).

- The local export market to neighboring African countries, where there is a demand for both staple and premium products, and where products can be shipped overland.
- Overseas export markets for premium products, where shipment must be made by air or by sea; although before the civil strife this market was somewhat developed, there is little current activity in this market, except for cotton and gum arabic exports.

By emphasizing interventions which strengthen delivery systems to each of these major markets, the marketing sub-project could address simultaneously the implied commodity-related priorities of the government and A.I.D. — food security and food self-sufficiency (mainly staple foods), import substitution and agricultural diversification (both staple and premium food products and non-food crops), and export expansion (mainly high-value food and non-food crops).

As noted in Chapter I in the section concerning scope and methodology, in performing this assessment, the initial step in identifying possible cross-commodity interventions was to examine rapidly the constraints within the principal commodity subsectors which serve or could serve Chad's major markets. The common constraints which were identified (Chapter III) do suggest the need for actions with a cross-commodity focus, but such actions might first be undertaken for particular markets or particular commodities, whether because of limitations in project funding, the need to test pilot actions on a small scale, or the urgency of the constraints or the relative potential of specific markets or commodity groups.

A Comprehensive Systems Approach, with Flexible Boundaries for Points of Intervention

Because of the interdependence of the multiple components within an agribusiness or commodity system (Chapter I), it is recommended that possible points of project intervention be defined broadly, with consideration given to strengthening system components which may not explicitly involve marketing activities, but which may in fact negatively affect the performance of marketing functions. Depending on the allocation of funding within the overall project, such actions might be financed as part of the marketing component or as part of the other agricultural production and technology transfer components.

Emphasis on Immediate Actions, but with Information Gathering to Provide an Effective Basis for Future Actions

Officials of the Government of Chad and A.I.D. have agreed that top priority should be placed on immediate actions to strengthen marketing systems. However, if there is insufficient information on the functioning or needs of these systems or on other key components within the broader agribusiness systems context of marketing activities, it may be impossible to define which actions might be most useful and to predict the impact of such actions. As a result, project interventions may be defined which are not only unnecessary or ineffective, resulting in wasted funds, but which may actually have a negative effect on the performance of the marketing systems.

Despite the priority for immediate action, it may be necessary to include information-gathering activities in the early stages of the project in order to define appropriate actions to be taken in the later stages of this project or in other projects. While a certain amount of time and funding is to be allocated to information gathering prior to and during the preparation of the project identification document (PID), if the information requirements are more comprehensive than those which can be addressed during the pre-PID and PID processes, it may be necessary to include information-gathering activities in the actual project and to allocate a proportion of project funding to these activities. The focus of any data gathering should be targeted clearly to address issues fundamental to the understanding of marketing systems, with the priority on topics which could serve as the basis for additional activities in subsequent phases of the project or in other projects.

Implementation of a Portfolio of Several Distinct yet Interrelated Activities

Because of the underdeveloped state of Chadian marketing structures and systems and multiple weaknesses at other points in the agribusiness systems, it may be necessary to consider the implementation of a portfolio of several distinct yet interrelated activities. This may also be necessary because of the lack of concrete information about how marketing systems and other key agribusiness components function. It may be impossible to identify any single action that can address the multiple existing problems and to define, predict, or measure the ultimate impact of any such action. As a result, it may be necessary to address simultaneously several of the most severe constraints; some interventions could first be tested with small-scale activities in limited areas to assess the responsiveness of target beneficiaries or actors and to evaluate the viability and potential impact of the interventions. Subsequently, depending on the amount and phasing of project funding, these pilot activities might be expanded in scale and geographical coverage.

III. PRINCIPAL CONSTRAINTS ON AGRICULTURAL MARKETING

The principal constraints on the functioning of agricultural marketing systems in Chad are described in the following sections. These constraints were identified through the selected literature review performed as part of this assessment, through interviews with public and private sector representatives involved in marketing, and from observations made during site visits. The constraints are categorized according to the approximate order of priority reflected by these sources. Many of the sources cited the deteriorated quality of the road system as the first constraint on marketing activities, but as explained in Chapter I, this problem will not be addressed by the new A.I.D. project, since it is presently being addressed by another A.I.D. project.

Primary Constraints

Shortage of Short-term Working Capital and Medium-term Investment Capital

Throughout the literature, the shortage of capital is cited as a principal constraint, or as the top priority constraint, on marketing and related activities. For example, a recent grain marketing study financed by USAID/N'Djamena included as a main constraint on grain trading the "insufficient capital of the majority of merchants to undertake cereals trading operations in the absence of an adequate credit system"¹¹ and concluded that "The unavailability of credit is constricting demand for private investment in (grain) production, storage, and transportation."¹² Similarly, the most recent IBRD analysis of the Chadian economy stated that

11. Grasberg and Hassanein 1988, p. 27.

12. Grasberg and Hassanein 1988, p. 8.

...the overwhelming impression is that Chadian entrepreneurs have a wealth of ideas and a dynamic entrepreneurial spirit, but there is a severe shortage of capital and the technical skills needed to turn these ideas into reality.¹³

Finally, government and PVO documents are replete with recommendations concerning the need to alleviate the capital shortage by initiating new credit activities for the private sector in general or for marketing activities for specific commodities.¹⁴

In the interviews with private sector traders and their representatives, the need for capital to stimulate or facilitate marketing activities was stressed repeatedly and vociferously. The director of the Union Nationale des Commerçants du Tchad (UNACOT) regional office in Bongor identified the shortage of capital as the most serious constraint on members' marketing activities and elaborated that virtually no investors are willing or able to supplement the members' personal capital and that no bank credit is available to the Bongor private sector. At a meeting with approximately 80 Bongor commerçants, the commerçants immediately directed the discussion of their problems to the subject of credit and intensely questioned the assessment team about the possibility of credit being made available for their marketing activities. In N'Djamena, a senior private sector representative of the Chambre Consulaire reported that the lack of capital is the principal problem facing Chadian entrepreneurs, and both large- and small-scale business people reiterated this view. Clearly, the many private sector representatives who met with the assessment team consider their shortage of personal capital and the lack of alternative sources of capital as the first constraint on their marketing and related activities.

According to the various sources, there is a need for both short-term working capital to finance inventory, repairs, transport expenses, and seasonal expenditures, and for medium-term investment capital for plant and equipment. The amount of capital needed appears to range from under US\$ 17,000 (the usual lending limit of VITA, the only credit institution lending to small- and medium-scale enterprises in N'Djamena) to amounts far exceeding this level. Examples of proposed projects for which financing is being sought include the purchase of a tractor/trailer truck (reportedly US\$ 120,000), the construction and operation of a tomato concentrate factory (US\$ 1.8 million), and working capital for a gum arabic exporter (US\$ 600,000 per month).

13. IBRD 1987, p. xiv.

14. For example, see Mascaretti and Audinet 1988, Ministère de l'Agriculture and BIEP 1988, Kent 1989, L'Entreprise et le Développement 1988; also ORT officials (interview, March 1989).

Aside from the VITA loan program, the main sources of capital for Chadian entrepreneurs are personal and family savings, the informal sector, and the two commercial banks. The scopes and limitations of these capital sources are explained briefly in the following sections.

Personal and Family Savings. In Chad, generally low income levels prevent the accumulation of savings sufficient to finance the investments required by most small businesses for growth and diversification. Further, the extended periods of civil strife resulted in the destruction of much personal wealth, family possessions, and personal and business assets; in recent years a high proportion of savings has necessarily been directed at the reconstruction of previously established homes and businesses and at immediate family needs. Of course, entrepreneurs are not usually expected to finance business investments entirely from personal and family savings.

Informal Sector. Although there is little empirical information on the Chadian informal financial sector, there is no suggestion by analysts or observers to date that any medium-term financing is provided through the informal sector. Instead, most informal credit which is reportedly provided is believed to be extremely short term (one week to three months), accorded to well-established or well-known individuals, and delivered at interest rates that would greatly exceed the profit margins of most businesses (several hundred percent per year).¹⁵ Although such credit may be used for short-term business needs, it is believed that most of this financing is used to meet immediate consumption needs and to pay for special family events, such as weddings or funerals. Respondents interviewed during this assessment also noted that frequently there are reciprocal, generally in-kind, credit relationships between farmers and traders. Traders may deliver inputs and occasionally cash for subsistence needs to farmers at the beginning of the crop season with the agreement that the farmer will deliver a compensatory proportion of his crop to the trader at harvest, or will sell his entire harvest to the trader. Farmers also often extend temporary credit to traders by ceding their crop to the traders with the promise of repayment after the crop is sold (usually several days). In Chad the only informal mechanism to obtain investment capital appears to be the tontine system, which is a savings 'club' whereby participants periodically contribute ("put") funds and occasionally win ("take") the contributions of all participants. However, tontines that have significant levels of "takes" (e.g., more than CFA 1 million, or US\$ 3,000) appear to be relatively rare, and they require that participants be able to

15. The information on the informal financial sector is drawn largely from Djongali 1989, Mock 1986, République du Tchad (Rehabilitation du Secteur Agricole [RSA] — Kanem) 1988, and interviews with private business people, February-March 1989.

offer contributions which reportedly would exceed the savings capacity of most Chadian business people (e.g., CFA 100,000, or US\$ 300, per month).¹⁶

Commercial Bank Credit. In theory, the commercial bank financing that is available in Chad is short-term credit, normally accorded for up to one year but sometimes granted for shorter periods. The banks prefer to finance low-risk, short-term, cash-generating activities partly because their loan funds derive principally from the short-term deposits of clients. Preference is given to well-established, well-known clients who have successful borrowing histories with the banks; this is partly because the banks have limited staff and resources to evaluate project proposals and to monitor project progress. Preference is also given to the larger businesses because of the lower lending costs of large loans. Aside from the financing to Chad's five largest industries, all agribusiness companies, which absorbed 72 percent of available credit in 1986, preference is given to projects that are not agriculturally related because the risks associated with agricultural and agribusiness activities are higher.¹⁷ Physical collateral and financial guarantee requirements are stringent, excluding even some of Chad's wealthiest business people, and there are limits on loan amounts which restrict the activities of the larger businesses.¹⁸

In addition to these principal sources of business credit, there have been several other sources of short- and medium-term financing in recent years. First, the Chadian Development Bank accorded medium-term loans until 1979, but most of them were reportedly for real estate construction. The Development Bank's operations were suspended during the civil strife, and there are no immediate plans to resume operations.¹⁹ Second, the commercial banks can obtain financing for loans of greater than one year's duration from the Central Bank, but this process is cumbersome and time-consuming (usually involving a waiting period of several years), and

16. Djongali 1989 and interviews with Djongali, March 1989.

17. The information on commercial bank credit is drawn mainly from interviews with officials from OPIT, IBRD, and VITA, as well as private business people (February-March 1989), and interviews with bankers from BIAT and BTCD (September 1986).

18. From interviews with several wealthy businessmen who own and operate large-scale businesses, February-March 1989.

19. In March 1989, USAID/N'Djamena received a cable (Abidjan 00478) noting that the African Development Bank is planning to provide the equivalent of US\$ 22 million to the Chadian Development Bank; no information was provided on the expected utilization of the funds or on the timing of the contribution.

preference is given to larger, well-established businesses. Third, in 1983 the French organization, Caisse Centrale de Cooperation Economique (CCCE) and the European Investment Bank (EIB) extended two lines of credit totaling US\$ 4.5 million to the commercial banks; these funds were to be used for medium-term financing for SMEs not involved in agriculturally related activities. However, the banks lacked the staff and resources to assist prospective clients in project development, to evaluate project proposals, and to monitor projects; in addition, project approval was required by the Industrial Promotion Office (OPIT), which reportedly never responded to certain requests for approval.²⁰ By 1986 none of the CCCE or EIB funds had been lent. As a result, a cofinancing plan was developed between VITA and one of the commercial banks to provide VITA support to the bank in project appraisal, monitoring, and client assistance; however, no loans were ever extended under this plan because of the lack of fit between the projects proposed and VITA's lending mandate at that time (to support 'productive,' not commercial, activities), as well as the continuing lack of success in obtaining OPIT's response to proposed projects. Subsequently the EIB funds (half of the available credit) were withdrawn, and it is unclear whether the CCCE funds are still available. Finally, there have been several small project-specific or commodity-specific credit programs in recent years, such as the National Cereals Office (ONC) program of short-term advances to merchants for the purchase of cereals stocks, which was discontinued because ONC could not ensure that the funds were used only to purchase cereals.

Despite the apparently overwhelming expressed demand for credit, both short- and medium-term, and the self-perceived need for such financing, the extent to which there is a significant body of 'viable' credit clients is unclear. The viability of the prospective client depends not only on the anticipated success of the proposed activity, but also on the requirements and lending practices of the financial institution, as well as on any additional requirements imposed by the government or by participating donors. The impressionistic research conducted during this assessment, as well as the opinions of government, donor, PVO, and business representatives, indicate that there is indeed a significant number of potentially viable agribusiness activities throughout the country which merit additional financing; however, it is not clear whether institutional requirements (such as the government ceiling on VITA's interest rates and the A.I.D. requirement of administrative cost recovery) can permit any new or existing credit institution to meet these financing needs, particularly in view of the exceptionally high administrative costs of delivering credit to dispersed areas.

It is also unclear why, if there is a significant unmet need for agribusiness credit in Chad, VITA has at certain times been unable to meet its

20. From interviews with bankers and business people who have recently submitted proposals to OPIT.

lending volume projections. Some experts argue that the sluggish demand for loans may be attributed largely to the Chadian investment climate, which is greatly affected by the often uncertain military situation; investors may be unwilling to undertake new activities when warfare within the country intensifies or is expected to intensify. Further, according to the World Bank and other sources, undertaking visible new business activities during periods of intensified conflict often leads to increased demands to support the war effort, thereby leading business people to defer activities which might require credit. The extent to which this condition still prevails and the extent to which it may prevail outside N'Djamena are unclear. Observers also question whether some business people may consider VITA's lending procedures to be excessively 'tough' and cumbersome, because the requirements established by VITA and the government may be unnecessarily demanding, or because the process of obtaining necessary government approvals and documentation can be extremely time consuming and frustrating. In order to definitively assess the viable unmet demand for agribusiness credit in Chad and to design any new credit activities to meet this demand, it would be essential to clarify these issues.

Excessive Concentration of the Timing of Production of Horticultural Crops

The horticultural sector, which includes more than 50 fruits and vegetables, is characterized by extremely brief periods during which the vast majority of producers harvest and attempt to market identical crops. Many of the agricultural experts interviewed noted that in their particular regions, virtually all of the farmers produce exactly the same products at exactly the same time.²¹ This results in market saturation, which in turn results in extremely low returns and high losses for producers, wholesalers, and retailers.

The problem is particularly severe for highly perishable products, such as tomatoes, in part because of the lack of produce conservation facilities, such as market refrigeration facilities, the virtual absence of processing industries for any horticultural products, and limited knowledge of on-farm or in-home processing technologies (see Chapter III). The problem is also most serious for producers who are distant from their intended markets; extremely high transport costs decrease margins to the point where it is uneconomic and inadvisable to continue production. (A horticultural adviser in Bougoumène is perplexed as to why farmers insist on continuing to plant tomatoes that will mature at the peak harvest season; at that time, after the

21. Reported by Madi Andeka (ONADEH), Firman Mansis (ORT), Robert Reitemeier (VITA), and Willy Burri (Centre Horticole de l'Animation Rurale de Bougoumène), interviews, February-March 1989; also from République du Tchad (RSA — Kanem) 1988.

deduction of transport costs to N'Djamena, he reports that farmers earn about CFA 50 per 50-kilogram case, or less than US\$.01 per kilogram.²²⁾

Although the saturation problem is particularly severe for perishable crops, it also affects the producers and traders of less perishable crops, such as cereals and onions. Farmers' needs for cash income at harvest time and limited trader financial resources to purchase and hold inventories often makes it impossible for either group to store products which, in fact, can be stored in simple, traditional ways; instead, both are obliged to dispose of the products quickly, usually at the peak harvest time when prices are at their lowest.

It was not clear to the assessment team whether the extreme market glut for tomatoes during the team visit occurs for many other horticultural products. However, an examination of the price variability for the principal products suggests that for many products, the saturation problem may be equally or even more severe. (Table 1 presents the 1988 monthly N'Djamena price data for the principal horticultural products; data are provided for both locally produced and imported products, but the two are not differentiated.)

Discussions with agronomists with experience in the Chadian horticultural sector indicate that it is technically possible to extend the growing season for many crops and that some can be produced in counter season. Interviews with farmers confirmed that some producers are attempting to program their production and harvests to not coincide with peak harvest periods; further, several projects are actively encouraging this practice. It is unclear why such attempts are not more widespread; the reasons may vary with the particular crop and specific location of production, as well as the conservability of the product, the farmer's financial circumstances, limited access to inputs, limited farmer expertise, lack of access to technical advice, the farmer's attitude towards risk, the availability of labor, access to water and irrigation facilities, or the timing of access to transport and marketing agents.

In addition to extending the growing season, another logical means of alleviating the problem of seasonal market saturation for particular products is to diversify the product mix. According to horticultural experts, it is possible under Chadian conditions to produce a much wider array of horticultural products; this potential is confirmed by the success of at least a few innovative farmers in diversifying their production and by the apparently

22. Interview with Willy Burri, March 1989.

successful experimental trials being conducted on some private farms.²³ However the constraints on further and more widespread diversification efforts are not clearly understood; such constraints may include such factors as lack of access to seeds or seedlings and other inputs, lack of access to technical advice, limited financial resources, and the absence of information on the profitability and risks of undertaking the production of new crops.

While one clear benefit from the diversification of Chadian horticultural production would be the alleviation of the present problem of seasonal market saturation for specific products, diversification could also contribute to the potential resumption and expansion of horticultural exports to neighboring African countries and to Europe. A consultant who recently analyzed Chad's horticultural production and export potential concluded that Chadian producers should diversify into papaya, passion fruit, pineapples, and bananas for export to Europe, Cameroon, the Central African Republic, and Gabon.²⁴ He also concluded that there is significant market potential in neighboring African countries during the winter months for leeks, carrots, tomatoes, celery, cabbage, mangoes, and melons, all of which are grown in Chad.

Inadequate Facilities for Preparing Business Plans and Feasibility Studies

Applications for bank credit worldwide normally require the presentation of a business plan or feasibility study of the proposed activity. This is also a usual prerequisite for attracting investors. In Chad the only established institutions which can assist private business people in performing this task are OPIT and VITA; VITA's assistance is restricted to its prospective clients, while OPIT's aid is available to all business people for a small subsidized fee (CFA 50,000). Several accounting services also provide assistance in financial analysis but do not specialize in the other required analyses.

OPIT, which is an office of the Ministry of Industry and Commerce, has a small staff of economists, engineers, financial analysts, and management specialists. The articulate director recently was awarded a trip to the United States by USIS' International Visitors' Program; there he visited small business support institutions and numerous private businesses. OPIT received UNDP financing and UNIDO technical assistance during 1986-88, although there are no plans to continue this assistance.

23. From interviews with agronomists from ONADEH SODELAC, VITA, Care, ORT, and Centre Horticole de l'Animation Rurale de Bougoumène, February-March 1989; also from Gerbaud, March 1988 and April 1989.

24. Gerbaud, March 1988.

The prevailing view within the Chadian business and donor community is that the quality of OPIT's work is weak and is not usually trusted by Chadian banks, and that requests to OPIT generally result in extremely lengthy delays before the expected work is prepared, if ever.²⁵ One leading businessman reports that he has submitted three project proposal requests to OPIT but has never received the requested analyses or even a response.²⁶ Another extremely accomplished businessman cited the lack of a competent facility to assist in dossier preparation as the principal constraint on the private sector in Chad.²⁷ The World Bank reports that of 96 requests to OPIT from 1984-87, only one project actually was approved and funded by a bank (although five other projects were still under review at the time of the 1987 report).²⁸

It is unclear whether OPIT's weaknesses result from such factors as a lack of funding and other resources, inefficient management, or a lack of qualified personnel. It is also unclear whether the UN support provided to OPIT was an appropriate type and level of assistance and whether the quality of the assistance was satisfactory.

The Private Sector's Lack of Access to Cereals Price Information

Private sector traders of cereals must rely on informal 'word-of-mouth' information on cereal availability and prices prevailing throughout the country; such information usually is transmitted by travelers from the provinces, including other traders and farmers who travel to the traders to relay the information. Based on this information, both farmers and wholesalers apparently make decisions about where and when to sell, store, or purchase cereal stocks. For example, a French-sponsored study of the cereals sector in 1988 described the informal exchange of price information by travelers between N'Djamena and Salamat, Aim Timam, and Mangalme; the authors observed that

Grace à cela, le commerçant peut constamment faire un calcul d'optimum de bénéfice entre vendre à N'Djamena ou dans la région, stocker, acheter

25. From interviews with private business people and bankers, February-March 1989; also from IBRD October 26, 1987 (p. 96), and République du Tchad (RSA — Diversification) 1988.

26. Interview, March 1989.

27. Interview, March 1989.

28. IBRD 1987 (Chad: Economic Situation), p. 96.

ou non des céréales dans le Salamat. . [L]es producteurs . . suivent également l'évolution des prix sur les différents marchés qui leur sont accessibles.²⁹ les agriculteurs se déplacent, par exemple, où les prix sont plus élevés.

Although some observers believe that this informal information system works relatively well, others argue that it is extremely inefficient, because of the time delays in transmission (which often result in out-of-date information), the irregular and uncontrollable frequency and timing of reception of the information, the lack of comparability of the data (owing to the pricing of grain according to unstandardized measures of volume rather than weight), and the fragmentary view which it provides of prices in the various alternative buying and selling regions. Further, an A.I.D.-sponsored study argued that this system results in imperfect competition, since available information is not always circulated widely; they described the "ineffective and insufficient inter-regional flow of market information which is accessible only to a limited number of wholesalers and which inhibits competition."³⁰ Finally, the French study cited above concluded that the inefficient circulation of information concerning cereals was a principal reason for regional imbalances in cereal supplies: "Les échanges entre la zone soudanienne et sahélienne semblent inexistant, en raison essentiellement de l'insuffisance de voies de communication."³¹

Several different groups are collecting periodic cereal price information and disseminating these data to the public sector; the most comprehensive efforts are being made by the Office Nationale des Céréales (ONC), le Système d'Alerte Précoce (SAP), and le Système d'Alerte Rapide (SAR). In early 1989, ONC established a Cellule d'Information, which uses ONC field agents in 14 ONC centers throughout the country to collect weekly data on the price per kilogram for two qualities of five cereals (millet, sorghum, rice, corn, and wheat). The agents, who are equipped with scales and calculators, weigh the various cereals and question retailers about current prices; if future funding permits, the agents will actually purchase the cereals, thereby providing a more accurate picture of possible negotiated prices. The data are relayed by radio to N'Djamena, where they are published in monthly bulletins which are distributed to government offices, donors, and NGOs. When the system is refined, ONC hopes to disseminate the information to the private sector in daily broadcasts on the national radio. Both SAP and SAR collect cereals price information for public sector famine prediction programs.

29. Gbipki et Harre, 1988 (pp. 16, 10).

30. Grassberg and Hassanein (1988) p. 27.

31. Gbipki and Harre (1988), p. 12.

SAP collects weekly retail price data for cereals and other products in 36 locations in the sahelian zone; this information is published monthly. SAR emphasizes the collection of production data in the soudanian zone, but also gathers weekly retail price data which are averaged by sous-préfecture before publication each month.

While the absence of timely, reliable price information may also constrain trade in other agricultural products, the problem appears most severe in the cereals sector. This is due to the overwhelming importance of cereals as a staple food product, the serious regional imbalances in cereals availability which often occur, and the apparent ability and willingness of cereal traders to respond to more comprehensive and timely price information.

Other Primary Constraints

Other primary constraints on the agriculture sector in Chad include the following:

- Insufficient access to reliable, effective transportation vehicles, and spare parts facilities
- Administrative and regulatory controls, and government policy
- Lack of information on the functioning of commodity systems
- Limited access to information on agricultural processing technologies
- Limited availability of food preservation facilities
- Lack of access to appropriate produce packaging materials, and inadequate market infrastructure

Secondary Constraints

Secondary constraints on the agriculture sector in Chad include the following:

- Limited managerial skills and experience
- Restricted access to agribusiness equipment, spare parts, and repair equipment facilities
- Lack of information on export markets, export market requirements, and export procedures
- Lack of produce grading standards
- Limited animal transportation
- Lack of information on and access to potential sources of investment capital

IV. RECOMMENDED AREAS OF PROJECT FOCUS

The analysis of the constraints on agricultural marketing and on the functioning of the major commodity systems (Chapter III) indicates that there are indeed many marketing-related issues that merit attention in the context of the new Agricultural Production and Technology project. The information currently available on certain issues seems complete enough to permit the design of immediate actions for inclusion in the project, while for other priority issues, the information available does not provide a sufficient basis for the identification and development of project activities. The limited time and funding available for information gathering before the initiation of the PID process, scheduled for July or August 1989, will permit examination of only a few of the issues requiring further analysis; the selection of these issues will depend partly on whether the necessary analysis can be accomplished during the time available. The remaining issues will have to be examined during the PID process, if the time and funding allocated for PID activities permit; alternatively, this information gathering might be designated as a component of the new project, to be performed in the preliminary stages of project implementation or included within the context of another project.

The recommended areas of project focus and the related issues which require additional examination before the design of project interventions are outlined in the following sections.

Agribusiness Credit

The delivery of additional credit for marketing and related agribusiness activities to rural areas (mainly secondary towns and selected villages) appears to be a top priority, according to the views of Chadian and expatriate agribusiness experts, government officials, and agribusiness entrepreneurs. The demand and need for agribusiness credit has been further substantiated by recent investigations by several PVOs, including CARE, ORT, and VITA; all are considering new credit activities outside N'Djamena, although because of funding limitations, the scope of these activities is expected to be quite limited. (For example, when a possible new source of funding was

identified recently, VITA personnel and the donor credit specialists involved concluded that the demand and need for credit justified the extension of VITA activities to Moundou, Sahr, and Abeche; however, subsequent reductions of the amount of new funding available are expected to restrict the extension to Moundou alone.)

A principal project focus on the delivery of agribusiness credit to rural areas would provide an effective vehicle by which to address several of the strategic elements suggested as a basic approach to strengthening Chadian agricultural marketing systems (Chapter II). Such a focus would allow the project to support a variety of actions addressing numerous commodity sub-sectors simultaneously; constraints on the performance of critical functions within these systems could be addressed by the same mechanism. For example, credit might be used to support farmer efforts to program and diversify their horticultural production, to expand farmer or trader capacity to store and transport crops, or to facilitate the installation of new processing facilities. The identification of the most promising commodity subsectors and the prioritization of constraints would be left, as Eliot Berg recommends, to the experience and skills of the entrepreneurs, with the approval of the lending and funding institutions.

The type of credit which appears to be most needed is as follows:

- Size of loans: Most of the demand appears to be for small- and medium-scale loans (less than US\$ 20,000), although there also appears to be some demand for larger loans (up to US\$ 150,000) and limited demand for very large loans (US\$ 1-2 million).
- Size of businesses: Mostly small-scale enterprises, but also medium-scale and a few large-scale enterprises.
- Location of lending: The few very large loans are most likely needed in N'Djamena, although there may also be a demand in other major towns. The smaller loans are needed in these towns and in other selected rural areas (excluding Moundou, if VITA expands to this area).
- Duration of loans: Mainly short-term (one month and less) and medium-term (up to four years), although for the few large loans a longer duration (five to six years) may be necessary.

Before project identification activities are initiated, several issues should be examined: (1) existence of a sufficient volume of potential borrowers in

particular rural areas to justify the administrative expenses which would be necessary to deliver credit to these areas; (2) factors that have inhibited demand for existing credit in recent years and whether such factors might affect future rural credit operations; and (3) methodologies for credit delivery to dispersed rural areas and ability of a rural credit program in Chad to comply with administrative cost recovery requirements. (Chapter V provides further details on the information needs concerning these issues.) The ultimate decision on whether to proceed with the development of a rural credit component will depend partly on the results of these analyses.

During the PID process, several additional issues should be investigated; they include (1) possibilities for co-financing activities between the commercial banks and the institution delivering the new credit, as well as ways to stimulate co-financing activities between the banks and VITA; this co-financing would be arranged mainly for the larger loans; (2) the possibility of supporting the commercial banks in dispersing the CCCE funds and using these funds for agribusiness activities; (3) the possible need to develop flexible lending procedures and repayment schedules for agricultural and agribusiness activities, because of the exacting demands for precision in the timing of these activities and the unique risks of these operations; and (4) the feasibility of establishing a credit guarantee mechanism to support the lending operations of the new credit program, as well as those of the commercial banks and VITA.

Support for Feasibility Study and Business Plan Preparation

Additional, more effective facilities are needed by private sector entrepreneurs who intend to apply for credit from the commercial banks or who seek financing from foreign banks or other foreign sources of financing. Additional facilities will also be needed to support potential borrowers from any new credit program, unless such support is provided by the program itself. No further information will be needed on this issue before the project identification process, although the PID team should investigate the following alternatives: whether to strengthen OPIT to perform studies for the private sector in general, as well as for the clients of the new credit program; whether to bypass OPIT and develop separate, more effective services for the private sector, including the clients of the new program; whether to strengthen VITA's capacity to provide these services for the clients of the new program, as well as possibly for the private sector in general.

Support for Horticultural Production Planning and Diversification

Several issues require investigation: the exact reasons for the concentration of the timing of production of many crops, the reasons for the unwillingness or inability to lengthen the growing seasons, where technically and economically feasible, and the potential for diversification into new crops. Although it would be optimal to conduct such an investigation before the PID process so that possible interventions addressing these problems could be included in the project design, the time necessary for this investigation would most likely exceed the time available before the start of the PID. Therefore these issues should be investigated during the PID process or, alternatively, in the preliminary stages of the project. The cursory examination of these issues performed during this assessment suggests that the most probable areas where future actions might be useful are horticultural research and extension support, access to inputs and credit, and access to information on export markets, as well as marketing requirements and procedures.

The Provision of Business Support Services

Consideration should be given to strengthening OPIT's capacity to provide and disseminate technical and market information needed by businesses or to establishing a separate business support center to perform this function (possibly as part of a new unit to support business plan preparation). The types of information which are needed include information on agricultural production and processing technologies; on appropriate equipment, packaging, and other inputs and where to obtain these items; and on markets within Chad, in neighboring countries, and in such areas as coastal African countries, Europe, and the United States, as well as the requirements and procedures for marketing to each area. The business support service could also act as a contact point for foreign investors and could assist Chadian businesses in identifying possible sources of investment capital (this would most likely be a relatively minor function, because of the current dearth of lucrative investment opportunities in Chad and the high risks faced by businesses operating in Chad).

A logical preliminary activity would be to assemble all existing information within Chad concerning these issues and to ensure that this information is made available to private entrepreneurs. The ACP/EEC information system which OPIT currently uses should also be evaluated to assure that the quality of the information and the speed of dissemination are adequate. It may be necessary to establish a linkage with an alternative source of information, such as a group that specializes in the provision of information on appropriate technologies, like VITA/Washington.

Support for a Cereals Marketing Information System

In order to determine the utility of providing support for the coordination and expansion of efforts to collect information concerning cereals prices and related issues and for the dissemination of this information to the private sector, a pre-PID study of cereals trading operations and the potential responsiveness of traders to an information system should be undertaken. If the study indicates that trader access to more comprehensive market information is advisable, support should be provided for the development of a cereals market information system. The PID team would determine the appropriate locus and mechanism for such a system, as well as the appropriate type and geographical extent of coverage and means of dissemination of the information.

Access to Appropriate Vehicles, Spare Parts, and Repair Facilities

Problems of access to vehicles, including constraints on vehicle purchase and rental, as well as access to spare parts and effective repair facilities, should be examined before the commencement of PID activities. The appropriateness of readily available vehicles for Chadian road conditions should also be assessed, as well as the comparative technical and economic feasibility of using alternative vehicles. Based on the results of this analysis, the possibility of using the Commodity Import Program to import and distribute more appropriate vehicles, spare parts, and repair equipment should be evaluated, as well as any additional support activities which would be required, such as training in vehicle maintenance and repair. If the CIP program cannot be used in this way, other alternative measures to facilitate access to these items should be considered by the PID team. In performing these analyses, the team should coordinate closely with the World Bank, which, under the SDA/PADS program, is planning to provide support for the training of metalworkers in several areas of the country.

Policy, Administrative, and Legal Constraints on Agribusiness Activities

Government policy, administrative, and legal factors which inhibit agribusiness entrepreneurs should be assessed as part of the PID process; such factors might include the continuing formal and informal roadside taxation, inappropriate import and export duty schedules, complex and time-consuming import and export procedures as well as informal taxation at the borders, cumbersome and time-consuming business and cooperative registration procedures, business taxation policies and procedures, and complex and inefficient legal support facilities. Any necessary support for actions to assist in

alleviating or resolving such problems might be included within the project design, and issues which must be addressed with the government could be negotiated before final project approval.

Food Refrigeration Facilities at the Central Market and Airport

The PID team should assess the technical and economic viability of providing access to food refrigeration facilities, such as cold storage or smaller refrigeration units, at the central market and the airport. Issues relating to the ability and willingness of Chadian entrepreneurs to invest in such facilities or their interest in utilizing credit for the facilities should be investigated, as well as managerial and technical support requirements. Other options for sources of investment capital, including A.I.D., and for methods for providing managerial and technical support, should also be analyzed. The viability of renovating the airport cold storage should be investigated, and renovation costs should be compared with the cost of constructing a new facility, carefully examining management alternatives.

Managerial and Technical Support for Agribusiness Associations

Private agribusiness associations, such as the Cooperative des Commerçants des Céréales, Arachides et Sesame and the cooperative of horticultural commerçants, which is being registered, may be able to benefit from technical assistance, training, and other support, such as the provision of business equipment and information about materials available for packaging, technical requirements for packaging, and procedures for obtaining packaging materials. Public associations such as UNACOT and the Chambre Consulaire could also benefit from such support. The PID team should analyze the utility of assisting these organizations and identify the organizations, or types of organizations, which merit assistance, as well as the types of assistance required. The team should also assess whether these organizations could facilitate the introduction of a system of product grading standards, and how this might be accomplished. While support for agribusiness associations should be considered within the new marketing project, the anticipated funding of cooperative activities to be provided under USAID's PVO project might also be used for this purpose.

Support for Basic Data Gathering on Key Commodity Systems

Although the information available on Chad's agricultural marketing systems indicates that there are immediate actions which can be taken to strengthen these systems, there is little or no concrete information on many critical issues concerning the functioning of Chad's principal commodity systems. This lack of information may lead the project design team to overlook other interventions that may be equally important or effective. Further, this lack of information inhibits government policy makers, donors, and those involved in the implementation of agribusiness-related activities in identifying and prioritizing relevant constraints and in designing actions to resolve these constraints; in fact, the absence of information may lead to the design and implementation of measures that negatively affect the intended beneficiaries. Therefore, in order to provide a more effective basis for the future policy, program, and project decision making, and for private sector decision making as well, USAID/N'Djamena should consider providing support for basic activities to gather data on Chad's principal commodity systems and other important agribusiness issues. Such support could be provided through the new marketing project or through other program or project funding.

The most crucial need for additional basic information concerns the commodity systems for the various cereals consumed in Chad. Although there have been numerous short-term studies on various issues relating to these systems, concrete information is lacking on such critical issues as farmer production decision making, private sector storage decision making and facilities, in-field losses and losses at other points in the commodity systems, the availability of appropriate processing facilities and their impact on cereals marketing and consumption, and consumer preferences and willingness to consume non-traditional cereal products. As noted above there is also an absence of information concerning cereal marketing activities; although the recommended pre-PID study will contribute to the information base on this issue, there may also be a need to conduct further examination of certain marketing issues. The generation of more comprehensive, concrete information on all of these issues will provide a more accurate basis not only for decisions concerning cereals marketing policies and activities, but also for decisions concerning Chadian food self-sufficiency and food security, which are top priorities for both the government and USAID/N'Djamena.

Additional information is also needed for many other commodity systems. Priority topics might include (1) the horticultural subsector: although BIEP is studying this subsector, it is unclear whether it will be able to examine key issues with sufficient detail and whether it will address all of the most critical issues; (2) the fish subsector; and (3) production, marketing, and processing systems for the numerous 'specialty' products, such as karité, spirulina, gum arabic, sesame, and herbs and spices. Other priority

topics could be defined by the PID team or through a subsequent review of data needs for other commodity subsectors.

Other information-gathering activities which should be considered include (1) the collection of data on the consumption of agricultural products, including both food and non-food products; and (2) support for the proposed study of the horticultural potential of the BET region, including constraints on the marketing of BET's agricultural produce. Although the World Bank intends to provide support for a national household survey which may address food consumption issues, the exact nature of the data to be collected is uncertain. USAID should coordinate closely with World Bank and government personnel on the planning of this survey in order to ensure that it generates data which will be useful for both public and private sector agribusiness planning.

V. SUGGESTED STUDIES TO PRECEDE PROJECT IDENTIFICATION PROCESS

As explained in Chapter IV, the following issues should be investigated before the initiation of the project identification process:

- Agribusiness credit delivery in Chad: the demand for additional institutional credit, constraints on VITA's activities in N'Djamena, and a methodology for credit delivery to dispersed secondary towns and villages.
- Constraints on access to appropriate transport vehicles, spare parts, and repair facilities for agribusiness activities; recommended solutions to these constraints.
- The private sector cereals marketing system: an analysis of private trading in cereals, constraints on these operations, the utility of a cereals information system and the potential responsiveness of traders to such a system, and the type of information needed.

The scopes of work for these studies are included in the following sections. In planning the funding requirements for the execution of these studies, the fact that the studies will be conducted during the rainy season should be taken into account. The travel time necessary for site visits may be greater than the time normally required, and provision may have to be made for travel by airplane because of the impassability of many roads. It should also be noted that the highly seasonal nature of agricultural marketing in Chad and the extreme inter-year variation makes it difficult to form an accurate picture of the market in a short time period, particularly during the summer months.

**Scope of Work for Agribusiness Credit Delivery in Chad:
Demand for Credit, Constraints on Present Credit Activities,
and Methodology for Credit Delivery to Selected Rural Areas**

Overview

An SME credit specialist and an agricultural/agribusiness credit specialist would assess the viable demand for agribusiness credit in dispersed rural areas and identify factors affecting past and present demand for SME credit in Chad. They would also examine existing LDC programs of credit delivery to SMEs in dispersed secondary towns and villages, analyze past efforts and present plans to deliver such credit in Chad, and provide preliminary design recommendations on a strategy and methodology for delivering such credit and other necessary support services to SMEs in Chad. Duration of assignments: SME specialist, 9-10 weeks; agricultural credit specialist, 7 weeks. Timing: to commence in mid to late May.

Tasks to be Performed

- Ascertain whether there are sufficient numbers of viable borrowing candidates to justify the initiation of additional credit activities in secondary towns and rural areas, to assess the types and sizes of loans demanded.
- Assess VITA's lending operations in order to identify factors which in the past have inhibited demand for their funds and which may continue to inhibit demand for their funds, as well as for any new lines of SME credit to selected rural areas.
- Assess credit delivery to dispersed secondary towns and villages in the principal programs in other developing countries. The principal issues to be examined are as follows:
 - Type of borrowers — individuals versus groups, basis for/type of groups
 - Activities of borrowers — agricultural versus non-agricultural
 - Methods of identifying borrower candidates; marketing or publicity activities
 - Borrower selection procedures and requirements

- Size and types of loans, duration
 - Loan delivery, administration, monitoring and recovery systems, including need for branch offices, the viability of local loan committees, efficacy of periodic visits from central office, cost-effective radius of activity from central or branch offices
 - Advisory assistance, if any, and methods of delivery
 - Record in loan recovery, default performance, methods of dealing with late payments and defaults
 - Program costs (administrative versus advisory), with details on categories of cost per borrower or per dollar lent (e.g., staff and special equipment requirements); success in administrative cost recovery
- Evaluate experiences in Chad to date of credit delivery to secondary towns and rural areas, including VITA's loan to Casier B in Bongor, Oxfam's loan to women growing taro in Ere, and CARE's loan to a farmer marketing group, among others. Examine issues listed above, as relevant, and evaluate reasons for success or failure of each credit experience.
 - Examine present plans of PVOs and other institutions in Chad to initiate lending outside of N'Djamena; this will include VITA, ORT, and CARE, among other possible groups. Examine factors considered in designing strategy and methodology for credit delivery, monitoring, and recovery, as well as anticipated costs and cost recovery expectations.
 - Make recommendations for the design of a strategy and methodology for extending credit to selected secondary towns and village groups in Chad. Identify appropriate institution or type of institution to deliver this credit, and detail reasons for this judgement. Outline steps to be taken and sequencing of actions needed in order to initiate credit delivery operations. Assess possibility for eventual administrative cost recovery for such operations in Chad.

- Assess the need for other business support activities, such as managerial and technical assistance, for potential clients of credit program outlined above.

Background and Qualifications of Consultants

- Educational backgrounds: SME credit specialist: M.A. in economics or business, with training in finance, marketing, small business planning and operations, and agricultural development. Agricultural/agribusiness credit specialist: M.A. in agricultural economics or business, with training in agricultural sciences, farming systems, farm management, and agribusiness
- At least 10 years of analytical or operational experience in developing countries, with at least 5 years of direct experience in small business credit or agricultural credit delivery
- Direct experience with small business credit or agricultural credit in at least three African countries; knowledge of credit programs in other LDCs, including command of literature and documentation on LDC credit programs
- Fluency in French (recent FS3 level or other recent proof of ability to speak and read)

Schedule of Task Execution

- Task 1: SME credit specialist: two to three weeks in Washington, D.C. Review of recent literature and documentation on LDC credit programs for SMEs in rural areas, and discussions with donors, PVOs, contractors, and other sources of information. Preparation of draft report on findings.
- Tasks 2-5: Both consultants: five weeks in Chad. Assess past and present factors affecting demand for SME credit. Review of documentation on credit demand, interviews with credit experts, site visits to rural areas. Review past activities and future plans for credit delivery to rural areas by institutions operating in Chad. Design methodology. Prepare draft report or detailed outline and discuss with Mission.

- Final report preparation: 10 days each, with final report to be submitted to USAID four weeks after departure from Chad.

Timing of Study

To be initiated in mid to late May, with final report submission in late August or early September.

Scope of Work: Accessibility of Appropriate Commercial Transportation Vehicles and Support Facilities

Overview

Two consultants (a transport vehicle/equipment specialist and a transport economist) would analyze the availability of and constraints on access to appropriate commercial ground transport vehicles, spare parts, and repair equipment and facilities, and recommend measures to alleviate these constraints. Duration of assignments: 5 1/3 weeks each. Timing: to commence in late May or early June.

Tasks to be Performed

- Assess the current status by region of availability of commercial ground transport vehicles for agribusiness products and equipment, mainly trucks of various sizes, but also such vehicles as motorcycles, bicycles, and carts. Also assess ownership and present access patterns, including access to commercial transport services and rental vehicles. This assessment should include an overview of the commercial trucking industry and supply/demand conditions for commercial transport generally.
- Assess constraints on efficient vehicle utilization by region, such as problems of vehicle repair, spare parts provision, and fuel supply. Enumerate these constraints and make recommendations concerning ways to alleviate or eliminate these constraints.
- Assess the need and potential demand for additional vehicles for transport of agricultural products based on

present conditions and constraints and for realistic scenarios for alleviating the constraints.

- Compare investment, operating, and spare part costs, as well as the performance effectiveness of the vehicles most widely used or easily accessible in Chad relative to other more effective, appropriate vehicles. Analyze any factors which could constrain the introduction and use of more effective vehicles and recommend ways to alleviate or eliminate these constraints.
- Assess the viability and appropriateness of utilizing the Commodity Import Program for vehicle, spare parts, and repair equipment importation, and delineate any related support activities necessary for the success of such a program. Examine public institutions that could utilize imported vehicles or mechanisms for transferring vehicles to the private sector.

Background and Qualifications of Consultants

Transportation Vehicle Specialist

- Technical experience: Experience in managing and analyzing trucking distribution and logistics.
- At least five years of experience with the transport sector in Africa, preferably in the Sahelian region; familiarity with cost and performance effectiveness of appropriate models of trucks (pickups, all-terrain vehicles, tractor trailer trucks) and of motorcycles, bicycles, carts, and other appropriate vehicles and equipment
- Experience with vehicle maintenance and repair, as well as training for vehicle repair, and familiarity with spare parts inventory management
- Recent proof of fluency in French

Transportation Economist

- Educational Qualifications: M.A. in economics or business, with transport specialization or experience
- Ten years of experience in economic analysis in developing countries; experience in analyzing vehicle investment, operating, maintenance, and repair costs; familiarity with evaluating costs of training programs for vehicle maintenance and repair costs. Familiarity with evaluating costs of training programs for vehicle maintenance and repair. Experience in estimating demand for transportation of agricultural products.
- Familiarity with A.I.D. and CIP program requirements and procedures
- Recent proof of fluency in French

Schedule of Task Execution

- Task 1: Two days each in the United States to investigate the CIP program and appropriate alternative vehicle issues (if necessary)
- Task 2: Four weeks each in Chad, including time to conduct selected field visits, submit draft/outline, and hold discussions with USAID
- Task 3: Five additional days each for report completion, in the United States or in Chad

Timing of Study

To commence in late May or early June and to be completed by early to mid-July.

Scope of Work: The Private Sector Cereals Marketing System

Overview

A crop information systems specialist and a cereals marketing specialist would analyze private sector cereals marketing activities and assess the potential responsiveness of cereals producers/sellers, wholesalers, transporters, and retailers to the public dissemination of information concerning cereals prices and possibly other cereals information. Duration: crop information specialist, 6 weeks; cereals marketing specialist, 9 weeks. Timing: to commence in late May.

Tasks to be Performed

- Perform rapid reconnaissance of private sector cereals trading operations nationwide, including the cereals marketing activities of farmers, wholesalers, transporters, retailers, and other relevant operators. Analyze constraints on cereals trading operations, and suggest measures to alleviate these constraints.
- Analyze present private sector access to information on cereals, including the type, scope, and frequency of the information, as well as its impact on trading activities.
- Assess the access of private traders to financing, as well as to transport and storage facilities, and traders' ability and willingness to alter trading practices as a result of increased access to timely, comprehensive information. Define constraints on trader willingness and ability to respond to such information and ways to alleviate these constraints.
- Describe the present programs of cereals data collection and dissemination in Chad, including the type, frequency, and geographical coverage of information gathered, units of measurement used, and the methodologies for data collection and dissemination. Describe efforts to coordinate these systems and the principal ways in which the data are used.
- Define the type, frequency, and geographical coverage of information which would be useful to different types of traders.

- Define the most effective method for disseminating this information and provide preliminary recommendations on the optimal timing of and the most appropriate languages for the dissemination of the information.

Background and Qualifications of Consultants

Crop Information Systems Specialist

- Technical and educational background: Masters degree in agricultural economics or related field with strong statistical training
- Ten years of experience with crop information systems, including four years with crop information systems in developing countries; at least two years of field experience in Africa
- Prior experience with cereals marketing systems in Africa
- Recent proof of fluency in French

Cereals Marketing Specialist

- M.A. in business or economics, with training in marketing, finance, and small business
- Ten years of analytical or operational experience in developing countries; five years of experience in agricultural marketing systems in developing countries, with at least two years experience relating to cereals marketing in Africa
- Familiarity with U.S. and developing country information systems
- Recent proof of fluency in French

Schedule of Task Execution

- Crop information specialist: five weeks in Chad. Cereals marketing specialist: seven weeks in Chad. Cereals marketing specialist to review literature and documentation on Chadian cereals systems and on present efforts to collect cereals data (two weeks). Both consultants to

conduct discussions with private sector traders in selected regions of the country. Interviews with government, donor, and NGO officials, as well as other relevant sources of information. Presentation of draft or outline and discussions with USAID.

- Completion of report: information specialist, six days; marketing specialist, ten days. Report to be submitted four weeks after departure.

Timing of Study

To commence in late May and be completed in late August.

APPENDIX A
INDIVIDUALS CONTACTED

N'Djamena Public Sector

Government of Chad

Chambre Consulaire

- (1) N'Ramah Saleh, Secretary General
- (2) Adoudou Artine, Vice President
- (3) Al Hadj Abakar Ousmane, Chef de la Division Promotion Industrielle, Commerciale, Agricole, Artisanale, et des Services

ONADEH

- (1) Dabi Mabissoumi, Director
- (2) Richard Kouma Samaan, Chef de la Division Commerciale
- (3) Mbai Gangria Luc, Chef de la Division Agrotechnique
- (4) Madi Andeka, Conducteur des Travaux Agricoles, former extension agent

ONC

- (1) Nadoumabe Yamadjita, Chef de la Division Commerciale
- (2) Mohamed Bocoum, Expert en Commercialisation des Céréales (FAO)

OPIT

- (1) Guealbaye Manasset, Directeur
- (2) Mahamat Bhradine Oumar, Assistant au Chef de Division "Etude et Suivi des Projets Industriels"
- (3) Yang Yabbe, industrial engineer

SODELAC

- (1) Moctar Ali, Directeur
- (2) M. Kana Bady Mahamat

BIEP

- (1) Philippe le Grontec

SONAPA

- (1) Laounodji Djambo, Directeur

Mairie

- (1) N'Garlem N'Garguiman, Secrétaire Général de la Ville de N'Djamena
- (2) Hassan Saline, Chef de Service Adjoint de la Voirie et du Génie Municipal, Ingénieur de Constructions Civiles
- (3) M. Bouba, Chef Comptable
- (4) Daniel Heu, Conseiller Technique (PNUD)

Radio Chad

- (1) Moussa Dagga, Directeur Général Adjoint Ministère de l'Information

U.S. Government**A.I.D.**

- (1) Bernard Wilder, A.I.D. Representative
- (2) Cary Kassebaum, Program Officer
- (3) Paul Morris, Program Economist
- (4) William Deese, Project Development Officer
- (5) Kurt Fuller, Agricultural Development Officer
- (6) Leslie McBride, Senior Adviser
- (7) Djongali Louahikba, Program Economic Assistant
- (8) Paul Laoubara Nadjiadjim, Food for Peace Liaison Assistant
- (9) Charlotte Sharp, Famine Early Warning System Adviser

Peace Corps

- (1) Carol Adoum, Assistant Director, Administration

Private Voluntary Organizations**ORT**

- (1) William Stringfellow, Chief of Party
- (2) Firmin Mansis, Agronomist

CARE

- (1) Djime Adoum, Agronomist
- (2) Lawrence Kent, Groupement Specialist/Economist

VITA

- (1) Robert Reitemeier, Directeur
- (2) Larry André, Directeur Adjoint
- (3) Youndailao Yotoloum, Administrator
- (4) Leyabe Passang
- (5) Haroun Sow, Conseiller Agricole
- (6) Abdoulaye Adami, Conseiller Agricole

Africare

- (1) Thomas Haettenschwiller, Chief of Party
- (2) Basil Nande, Hydrologue

*Other**CILSS*

- (1) M. Oumar Pacha

World Bank

- (1) Horst Scheffold, Resident Representative
- (2) Elsie Garfield, Agricultural Economist
- (3) Regine Bendikot, Senior Country Economist

N'Djamena Private Sector

- (1) Abdoulaye Djonouma, PDG Société Commerciale du Chari et Logone; exporter of gum arabic, karite, sesame, dried hibiscus, cotton oil, cotton fiber, peanut and cotton cakes
- (2) Adoudou Artine, former President, Société Tchadienne d'Exploitation de la Gomme Arabique; gum arabic exporter, hotel owner, entrepreneur
- (3) Abakar Bichara, owner/director, cereals storage facility, Marche Central, N'Djamena
- (4) Adj. Abakar, fruit and vegetable wholesaler
- (5) Abdoulaye Mohamet, fruit and vegetable wholesaler
- (6) Alaou Hassan, fruit and vegetable wholesaler
- (7) Abba Djidda, fruit and vegetable wholesaler
- (8) Hissein Ali, fruit and vegetable wholesaler
- (9) Moussa Djibrine, fruit and vegetable wholesaler

- (10) Al Hadj Mahamat, fruit and vegetable wholesaler
- (11) Mahamat Adam Adji, Directeur, Societe d'Equipment Technique et Agro-alimentaire; importer of fruits and vegetables from Europe/cold storage manager
- (12) J.P. Guiliani, gérant, Societe GER (road construction)
- (13) Abakar Mohamed, vegetable wholesaler
- (14) Abakar Adoum, fruit and vegetable wholesaler
- (15) Abdoulaye Seitchi, millet and sorghum wholesaler
- (16) Seid Ali, fruit and vegetable wholesaler
- (17) Moussa Adam, peanut wholesaler
- (18) M. Shoko, corn and beans wholesaler
- (19) Abakar Taher, corn, sugar, gumbo wholesaler
- (20) Sako Ali, potatoes, lemon retailer
- (21) Assam Koulou, vegetable wholesaler
- (22) M. Moussa, avocado, pineapple retailer
- (23) El Hadj Mahamat Dasser, owner of construction firm/entrepreneur
- (24) Soumaine Abakar, operator, decorticator (corn and millet)
- (25) Ali Abakar, operator, dried tomato mill

Other Private Sector

Saiba

- (1) Rahim Moussa, farmer (fruits and vegetables), Chef de Village

Miskine

- (1) Ousmane Mahamat, Chef de Village, farmer
- (2) Ngueir Abakaka, farmer
- (3) Jean Tchounisia, farmer
- (4) Mahamat Abakaka, farmer

Bougoumène

- (1) Daiguidingar Nangar, Economiste, Direction de l'Enseignement et de la Formation Professionnelle Agricole
- (2) Burri Willy, Centre Horticole de l'Animation Rurale de Bougoumène

Bongor

- (1) Toglengar Djedingam, Prefet Adjoint, Prefecture, Secretaire General Comite Regional, Union Nationale des Commerçants du Tchad (UNACOT), Mayo-Kebbi
- (2) Mahamat Amadou (France, Congo), onion producer and exporter, rice miller, real estate operator
- (3) El Hadj Abamanzar, commerçant/transporter
- (4) M. El Bousa, commerçant/farmer
- (5) M. Tchari, commerçant/farmer
- (6) M. Baba, commerçant/farmer
- (7) M. Linan, commerçant/farmer
- (8) Nambaye Gabaret, commerçant/farmer
- (9) Adamou Danigui, commerçant/farmer
- (10) Waibala Djouma Pompil, commerçant (hides and skins)
- (11) Abakar Lifassou, commerçant/transporter
- (12) Mouda Madgnar Mathieu, commerçant/farmer
- (13) Mahamat Oumar, onion farmer
- (14) El Hadj Oumar Faki Ali, commerçant/farmer
- (15) Amadou Daro Djoba, commerçant/farmer
- (16) Birie Youssouf, commerçant/farmer
- (17) Abaya Abderaman Fitounes, commerçant/farmer
- (18) Yaya Ahmadou, commerçant/farmer
- (19) Abdelkerim Safil, commerçant/farmer
- (20) Raisibet, commerçant/farmer
- (21) Oumara Djaro, commerçant/farmer
- (22) Mahamat Abakar, commerçant/farmer
- (23) Famanou André, nightclub and bar owner/commerçant/farmer
- (24) Others, including rice and peanut decorticator operators, peanut butter and millet/sorghum mill operators

Washington, D.C.**A.I.D.**

- (1) John Lewis, Officer-in-Charge, Sahel Regional Office (AFR/SWA/SRO)
- (2) Ron Daniel, Desk Officer/Chad, Africa Bureau
- (3) Ken Swanberg, Market Development and Investment Office, Africa Bureau
- (4) Tom Mehen, Office of Science and Technology/Rural Development

World Bank

- (1) Elsie Garfield, Agricultural Economist, Sahel Region
- (2) Alexandre Marc, Social Dimensions of Adjustment Office
- (3) Ilene Photos, Operations Assistant, Sahel Region

VITA

- (1) Richard Slacum, Small Business Specialist

AMIS

- (1) John Holtzman (Abt), Agricultural Marketing Interventions and Strategies Project
- (2) Richard Abbott

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APPENDIX B
SITES VISITED

N'Djamena

- (1) Marche de Mil, Marche Central, Marche Dembe
- (2) DOM cold storage facilities
- (3) CFF and SODELAC airport cold storage facilities
- (4) Gum arabic grading and bagging facility
- (5) Wholesale fruit and vegetable depots, Marche Central
- (6) Grain storage facilities, Marche de Mil
- (7) Corn/millet decorticator
- (8) Sorghum/corn/millet/peanut and tomato mills
- (9) Cereals consumers' household (millet preparation)

Other

- (1) Millet/sorghum millers in Koundoul, Loumia, Moulkou, Guelendeng, Kalgoa, Gambarou, and Linia
- (2) Markets in Linia, Bongor, Koundoul, Loumia, Mai Lao, Kalgoa, Moulkou, Guelendeng
- (3) Farms in Saibe, Miskine, Bongor, Bougoumene
- (4) Grain storage facility, Bongor
- (5) Rice and peanut decorticators, Bongor
- (6) Sorghum/corn/millet mills in Koundoul, Loumia, Moulkou, Guelendeng, Kalgoa, Gamarou, Linia, Bongor
- (7) Rice decorticators and peanut mills, Bongor

APPENDIX C
SCOPE OF WORK

Scope of Work for Private Sector Agricultural Marketing Professional

Purpose and Summary

The Private Sector Agricultural Marketing Professional will provide services for a broad-based conceptualization of an approach to marketing prior to development of a new agricultural project with a large marketing component. This work will be accomplished by two marketing specialists in two three-week phases with the Private Sector Agricultural Marketing Professional completing the second phase.

Background and Description of Work

The Mission recently approved a program rationale, supported by other documents and activities of PVOs currently engaged in agricultural technological transfer, that identified the lack of agricultural markets as a major constraint limiting increases in production and income in the agricultural sector. Although the importance of agricultural marketing is manifest, the Mission lacks marketing information and does not know which aspects of marketing are most suitable for further investigation and development. Thus, the Mission will require assistance in formulating the steps required before the marketing component of an agricultural project can be developed. This current project will be divided into two phases. Services of the private sector agricultural marketing professional will be required during Phase II of the project.

General Responsibilities of the Marketing Professional

During the second three-week phase of the project, the private sector marketing professional will join the senior marketing specialist. After having been briefed by the senior marketing specialist on the results of the literature search, the senior marketing specialist and the private sector marketing professional will meet with Chadian officials concerned with marketing, PVOs with marketing activities, and other donors or international organizations with marketing activities. Both experts will meet with private merchants and visit local markets in N'Djamena and other markets in Chad and northern Cameroon. In addition to these responsibilities, the marketing professional will assist the team leader in preparing and presenting the draft and final project reports to USAID Mission personnel. Reporting requirements are summarized below.

Reporting Requirements for the Private Sector Marketing Professional

The private sector marketing professional will assist the senior marketing specialist in the preparation and submission of a final report that will contain: (1) results of the literature search and the information gathered from interviews and site visits; and (2) a detailed workplan and timetable that will put the Mission in a position for PID development. This report will also include, if deemed necessary by the consultants, a justification and terms of reference for additional work. Both consultants will present the draft report to the Mission three days before they depart and the final report should be submitted to the Mission before departure.

APPENDIX D

PRICE TABLES

Table 1. Prix Mensuels du Kilogramme de Quelques Legumes et Fruits
N'Djamena
(FCFA)

Produit	Janvier	Février	Mars	Avril	Mai	Juin	Juillet	Août	Sept.	Oct.	Nov.	Déc.	Moyenne annuelle	Prix haut divisé par prix bas
Legumes														
All		<u>565</u>	460	400	515	420	500	500	500	500	<u>335</u>	400	465	169
Asperge														
Aubergine locale	130		<u>180</u>					<u>365</u>	280		215	225	235	203
Aubergine violette			<u>250</u>	505	385	540	<u>575</u>	365	270	500	315	445	415	230
Betterave	<u>1565</u>	825	1070	<u>655</u>	1065				1200	1430			1115	239
Carotte	555	<u>400</u>	500	750	865	715	1000	<u>1250</u>	890	1200	575	445	760	313
Céleri		835	<u>675</u>	1000	1665	<u>2775</u>	1000	2000	1000	2000			1440	412
Chicorée frisée														
Chou fleur														
Chou pommé	330	<u>285</u>					1165		780	820	600		665	409
Concombre			295		285	<u>170</u>	285	<u>500</u>	285	335	375		320	295
Cornichon														
Courgette					<u>250</u>			<u>750</u>			500	280	445	300
Epinard	145			140	315	200	170	<u>335</u>	<u>125</u>	145			200	268
Fenouil														
Feuille de Jute						<u>155</u>	250			<u>335</u>			250	217
Gombo	290		410	295	<u>670</u>	430	445	310	335	400	335	185	375	232
Haricot local	<u>420</u>		835			530	500	<u>1000</u>			500		630	239
Haricot vert		<u>400</u>			725				500	500		<u>1000</u>	625	250
Laitue	350	<u>160</u>	245	505	<u>825</u>	595	625	625	430	430	335	<u>360</u>	460	516
Mais							135							
Manioc						<u>425</u>	200	185		215		<u>180</u>	240	237
Navet	145	265			275	<u>300</u>	275	170	230		300	<u>100</u>	230	300
Oignon	175	135	185	155	<u>115</u>	205	200	135	265	<u>375</u>	335	<u>230</u>	205	327
Oseille					<u>165</u>	<u>1820</u>								1104
Patate		130		65	115	120	<u>225</u>	60		150		170	130	375
Persil		965	1045	2000	2500	<u>5000</u>	1000	2000	2000	2000	2000	<u>500</u>	1910	1000

(continuée)

Table 1 (Continuée)

Produit	Janvier	Février	Mars	Avril	Mai	Juin	Juillet	Août	Sept.	Oct.	Nov.	Déc.	Moyenne annuelle	Prix haut divisé par prix bas
Petit oignon		<u>500</u>	810	910	1250	<u>2130</u>	1000	2000	1000	1000	<u>500</u>	1000	1100	426
Petit pois		1000												
Piment d'alsace		530		<u>480</u>	<u>2705</u>	2130	1500	750	835	1500	500	500	1145	564
Piment pili-pili							1000							
Poireau	1000		1240	<u>375</u>	<u>1625</u>		910	1250			1250	875	1065	434
Pois de terre														
Poivron		910	<u>655</u>	1380	2425	3030	2500	2500	1250	<u>3000</u>	800	875	1755	459
Pomme de terre	345	215	200	<u>405</u>	270	310	335	<u>170</u>	250	350	310	200	280	239
		145												
Radis		555	380	<u>650</u>			<u>250</u>	500	500	500	500	500	480	260
Roquette						<u>1250</u>	<u>500</u>	910	1000	1000		<u>500</u>	860	250
Tomate fraîche	500	260	215	360	610	<u>1145</u>	715	1110	625	860	670	<u>235</u>	610	533
Fruits														
Ananas			280	300			<u>1000</u>		615		525	640	560	358
Avocat				440	530	<u>550</u>					<u>430</u>		490	128
Banane	<u>255</u>	260		440	335		345	<u>500</u>	335	<u>500</u>	300	285	360	197
Citron	<u>350</u>	715	<u>910</u>	540	535	500	800	625	670	<u>500</u>	375	500	585	260
Goyave							375			<u>500</u>		<u>250</u>	375	200
Mandarine	<u>155</u>	220				<u>375</u>							250	242
Mangue			205	<u>135</u>	320	225				430	335	<u>625</u>	325	463
Melon			275	<u>700</u>	200		375	500		585		<u>250</u>	440	280
Orange		170	250			175	170	<u>285</u>	250	270	<u>125</u>	200	210	228
Pamplemousse	<u>215</u>				<u>625</u>	310	250	500	500	430	420	500	420	291
Papaye														
Pastèque	<u>150</u>			125	<u>85</u>	100			145			125	120	177
Pomme		<u>1665</u>		<u>1205</u>				1500					1460	139

Note: Les prix le plus haut et le plus bas pour chaque produit sont soulignés.