

PN-AAR-107

10/ 3603

FOOD CROP MARKETING IN NORTH SHABA, NORTH AND
SOUTH KIVU, BUMBA ZONE (EQUATEUR) AND KWILU.
SUBREGION (BANDUNDU)

The Small Farmer Marketing
Access (SFMA) Project # 936
May, 1983

TABLE OF CONTENTS

	<u>Page</u>
List of Tables	v
List of Maps and Figures	vii
Map of Zaire	ix
Abbreviations	viii
Preface	x
Executive Summary	xii
Economic Constraints	xii
Constraints to Increasing Agricultural Production and Marketing	xiii
The Need for Interventions that Support Private Sector and Local Initiatives	xix
Structure of the Report	xod
 ANNEX 1 Study of Small Farmer Marketing Access Transport Systems and Constraints	 1
Objectives	1
I. Kongolo - Nyunzu Area	1
II. Kivu	9
III. Bumba	15
IV. Summary and Conclusions	19
 ANNEX 2 Maize Production and Marketing in North Shaba	 21
I. Production, Marketing and Exports of Maize in North Shaba	21
A. Maize Production	21
B. Increases in Maize Marketing	24
C. Maize Marketing Channels and Flows	25
D. Trends in Maize Prices	26
II. Production and Marketing of Other Foodcrops	29
III. Constraints to Increasing Production and Marketing of Food Crops in North Shaba	31
A. Small Farmer Access	31
B. Small Trader Marketing Access	33
C. Constraints Facing Large Traders	34

ANNEX 3	Agricultural Production and Marketing in South and North Kivu	35
I.	Summary and Policy Conclusions	35
II.	Food Crop Production and Marketing in Kivu Region	36
A.	Food Crop Production in South and North Kivu Subregions	36
B.	Marketing of Agricultural Produce from North Kivu	39
III.	Constraints to Expanding Agricultural Production and Marketing in Kivu Region	42
IV.	Livestock Production and Marketing in North Kivu	44
A.	Cattle Production	44
B.	Small Stock Production	45
C.	Cattle Marketing and Flows in North Kivu	46
D.	Constraints to Expanding Livestock Production and Exports	50
V.	Fish Production and Marketing in Kivu	52
ANNEX 4	Rice Production and Marketing in Bumba	55
I.	Summary and Policy Conclusions	55
A.	Introduction	55
B.	Constraints to Production	56
C.	Constraints to Market Access and Marketing	56
D.	Potentials	57
II.	Rice Production and Marketing	57
A.	Rice Production	57
B.	Rice Marketing and Processing	60
III.	Principal Constraints to Expanding Rice Production and Marketing in Bumba	64
A.	Production Constraints	64
B.	Constraints to Improving Rice Marketing	65
IV.	Production and Marketing of Other Foodcrops	67

	<u>Page</u>
ANNEX 5 Agricultural Marketing in Kwilu Subregion (Bandundu)	70
I. Summary and Policy Conclusions	70
II. Field Trip to Kilwit	74
A. Estimated Shipments of Manioc from Bandundu to Kinshasa	74
B. Retail Price Trends for the Town of Kilwit	75
C. COOAIK (Compagnie de Developpement Agro-pastoral Integre du Kwango-Kwilu)	78
D. Private Firms Interviewed in Kilwit	82
III. Field Trip to Idiofa	89
A. Agricultural Marketing in the Idofa Zone	89
B. Principal Buyers of Agricultural Produce	90
C. Agricultural Production and Prices	92
IV. Field Trip to Bulungu	95
A. Road Maintenance in the Bulungu Zone	95
B. Fernandes Irmaos & CIE	96
C. Visit to the Kindongo Market (Mokamo collectively Masi-Manimba Zone)	98
D. ANEZA and the Role of Small to Medium Scale Merchants in Agricultural Marketing	99
ANNEX 6 Agricultural Marketing and Applied Research Activities in Kinshasa	102
I. Association des Femmes Commerçants (AFECOZA)	102
II. Agricultural Marketing Studies and Interventions of the Condition Feminine et Socio-Culturelle of the Division Economique, Condition Feminine	102
III. Visit to Kinshasa Marketplaces	103
IV. Applied Research Activities of the Bureau d'Analyse Economique, Service d'Etudes, Departement de l'Agriculture et du Developpement Rural	104
V. Retail and Wholesale Price Data for Food Crops Marketed in Kinshasa	104
VI. Proposed Survey of Food Shipments to Kinshasa	105
VII. River Transport of Agricultural Commodities to Kinshasa	106

	<u>Page</u>
VIII. Production and Distribution of Sacks in Zaire	103
Individuals Contacted During the Study	110
Bibliography	114

5

LIST OF TABLES

		<u>Page</u>
 <u>EXECUTIVE SUMMARY</u>		
Table 1	Summary of Major Constraints to Production in Selected Areas of Zaire	xiv
Table 2	Summary of Major Constraints to Market Access and Marketing in Selected Areas of Zaire	xvi
 <u>ANNEX 2</u>		
Table S-1	Maize Production and Marketing the North Shaba Project Area, 1978-79 through 1981-82	22
Table S-2	Maize Production and Marketing in the Kongolo and Nyunzu Subregions, 1978-79 through 1981-82	23
Table S-3	Maize Prices in the North Shaba Project Area, 1979-1982	27
Table S-4	Marketed Quantities of Foodcrops Other than Maize in the North Shaba Project Area by Subregion, 1978-79 through 1981-82	30
 <u>ANNEX 3</u>		
Table K-1	Retail Food Prices, January 1982-February 1983	38
Table K-2	Production and Commercialization of Principal Food Crops in North Kivu, 1979-1981	40
Table K-3	Monthly Air Shipments of Goods and Passengers from Goma to Kinshasa by Katale Aero Transport, 1982	41
Table K-4	Cattle Import and Export Balance Sheet for North Kivu, 1981	48
Table K-5	Annual Air Shipments of Beef from Goma Airport by Destination, 1979-1982	51
Table K-6	Monthly Fish Production by COPEVI (Cooperative des Pecheurs de Vitshumbi)	54

ANNEX 4

Table B-1	Paddy Production in the Bumba Zone, 1979/80 through 1981/82	58
Table B-2	Market Shares of Principal Firms in Purchasing Paddy in the Bumba Zone, 1981-82	61
Table B-3	Monthly Shipments of Rice by Private Transporters from Bumba, January - December 1982	63
Table B-4	Prices for Selected Consumer Goods in Itimbri Collectivity (Bumba Zone), Early 1982 and March 1983	66
Table B-5	Estimated Production of Principal Food Crops in the Bumba Zone, 1979-80 through 1981-82	68
Table B-6	Quantities of Agricultural Commodities Transported by ONATRA from Bumba to All Ports on the Zaire River, 1981 and 1982	69

ANNEX 5

Table KW-1	Retail Price Indices for Urban Households in Kikwit, February-December 1982	76
Table KW-2	Retail Prices of Selected Agricultural Commodities and Consumer Goods at Markets in the Town of Kikwit, February-December, 1982	77
Table KW-3	List of Shareholders, CODAIK	79
Table KW-4	Summary of CODAIK's Proposed Road, Bridge and Ferry Maintenance Program	81
Table KW-5	Evolution of Prices for Principal Agricultural Commodities in the Kwilu Subregion, 1980-1983	85
Table KW-6	Monthly Shipments of Manioc to Kinshasa by Ste. Bulangelu, First Quarter, 1983	88
Table KW-7	Agricultural Production and Commercialization in Idiofa Zone, 1980-81 and 1981-82	93
Table KW-8	Farmgate Prices for Selected Commodities, 1982 and 1983	94
Table KW-9	Agricultural Commodity Purchases by Fernandes Inmaos & CIE, 1980-1982	97

1

ANNEX 6

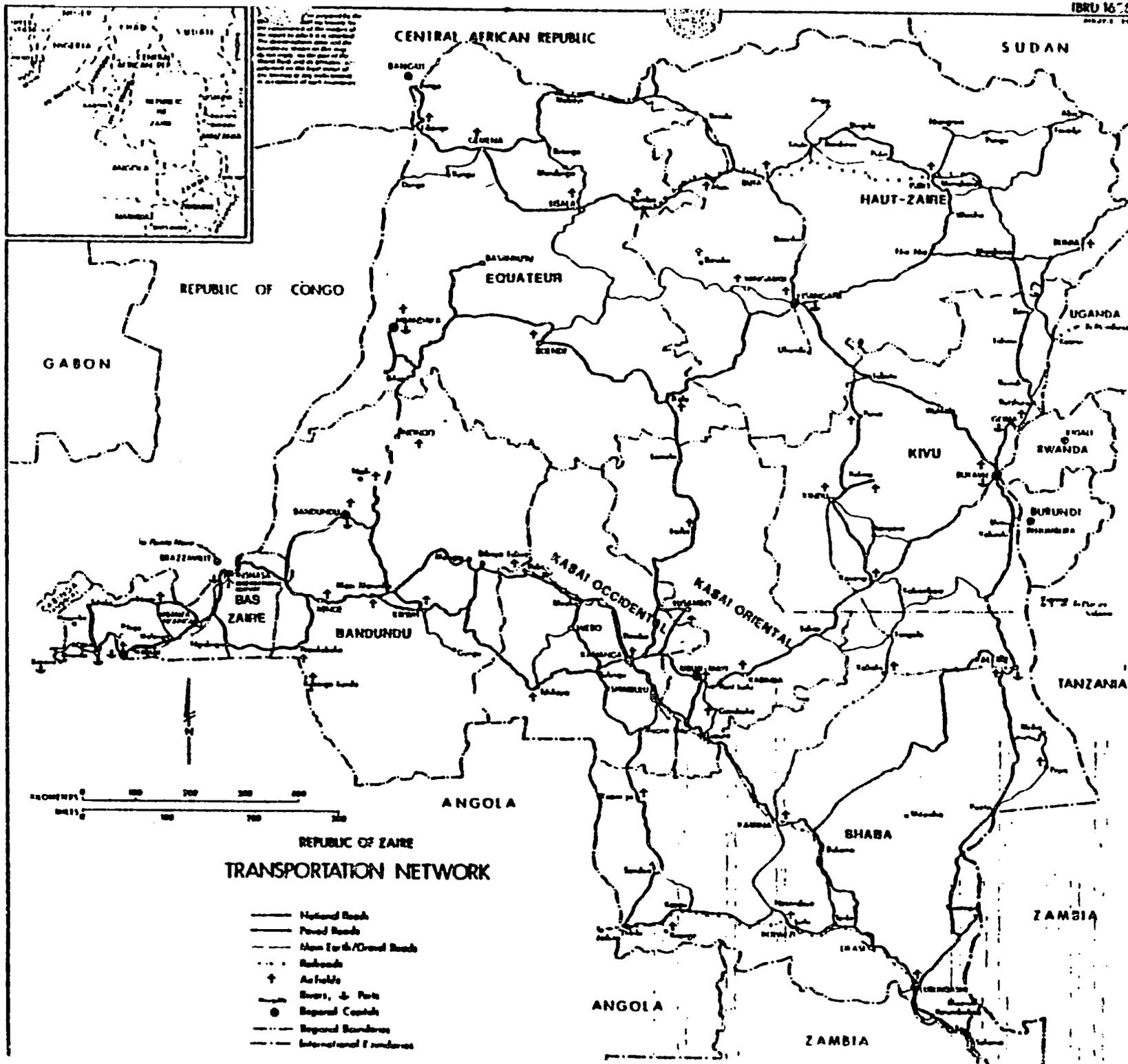
Table KIN-1 Annual Shipments of Selected Commodities by ONATRA from Points Along the Zaire River Between Kisangani and Bumba to Kinshasa, 1981-1982	106
Table KIN-2 Annual Shipments of Selected Agricultural Commodities by ONATRA from Points Along the Kasai and Kwilu Rivers to Kinshasa, 1980-1982	107

List of Figures and Maps

Map of Republic of Zaire: Transportation Network	ix
Figure K-1: Estimated Cattle Flows Within, to and From North Kivu, 1981	47

ABBREVIATIONS

APECOZA	Association des Femmes Commerçantes du Zaïre
AMIZA	Agence Maritime International Zaïre
ANEZA	Association National des Entrepreneurs du Zaïre
CAPACO	Societe de Cafe, Papaine et Commerce
CIDA	Canadian International Development Authority
CODAIK	Compagnie du Developpement Agro-Pastoral du Kwango-Kwilu
DOA	Department of Agriculture and Rural Development
ESTAGRICO	Societe Agricole et Cotoniere de l'Est
FED	Fonds Europeens de Developpement
GOZ	Government of Zaïre
INERA	Institut National pour l'Etude et la Recherche Agronomiques
ONATRA	Office National des Transports
OPEZ	Office des Petites et Moyennes Entreprises
OR	Office des Routes
OZAC	Office Zaïrois de Controle
PLZ	Plantation Lever au Zaïre
PNM	Programme National Maize
PNR	Programme National Riz
PNS	Projet Nord Shaba
PRONAM	Programme National Manioc
SNCZ	Societe National Des Chemins de Fer du Zaïre
SOFIDE	Societe Financiere pour le Developpement
TISSAKIN	Filatures et Tissages de Fibres a Kinshasa



10

PREFACE

This study is not a nationwide agricultural marketing assessment. The USAID Small Farmer Marketing Access Project team travelled to four different regions of Zaire in the course of the study, but the team was unable to visit many important agricultural production areas. Moreover, the team spent too little time in each of the four regions to conduct anything other than reconnaissance surveys. Yet the problems and constraints in the marketing of food crops and inputs into food crop production were found to be similar across regions of Zaire. Differences do exist, of course, owing to dissimilarities in geography, climate, demographic characteristics, the resource base, infrastructural development, and the mix of food and industrial crops. However, a number of common themes emerged which characterize agricultural marketing constraints in the four regions visited, and probably other regions of Zaire as well.

The report begins with an executive summary that discusses these common constraints and opportunities across regions and summarizes the policy implications of our findings. The summary is followed by six annexes, which include the transport consultant's report and more detailed discussions of agricultural production and marketing in the four regions visited. None of these individual reports is exhaustive in its coverage of transportation and agricultural marketing constraints and opportunities.

As is common to all short term work, the risk of drawing incorrect inferences and making misstatements is high. The team is solely responsible for any errors and omissions that do exist in the report. Interested readers are recommended to consult other studies carried out by the World Bank, FAO, the FED, the Canadian Cooperation, and various agencies of the Government of Zaire (GOZ) for further information. Additional references are found in the bibliography.

The field work for this study was conducted during seven weeks in March and April 1983. The team's itinerary is outlined below:

March 5-9	Briefing, Preliminary Interviews and Literature Review in Kinshasa
March 5-10	Field Work in Kongolo, North Shaba
March 15-17	Field Work in Bukavu, South Kivu
March 17-21	Field Work in North Kivu
March 22-25	Field Work in Bumba Zone, Equateur
March 26- April 4	Write-up and Discussion of Team's Preliminary Findings in Kinshasa

11

Economic Constraints

Zaire is a vast country of great geographic, climatic and agricultural diversity. Yet constraints to agricultural production and marketing are strikingly similar across diverse regions. These similarities reflect in large part macroeconomic difficulties common to all of Zaire. The macroeconomic climate is characterized by:

1. Foreign exchange scarcities and hence critical shortages of imported capital goods, vehicles, spare parts and fuel.
2. Burdensome foreign debt and large government deficits.
3. Deteriorating transportation and marketing infrastructure.
4. Scarcity of trained manpower, which leads to poor management of scarce resources, particularly in the public sector.
5. Financial irresponsibility and widespread diversion of development funds and resources.
6. Declining terms of trade for food crops vis-a-vis consumer goods and high levels of food imports (made artificially cheap by the overvalued exchange rate), which provide grave disincentives to food crop production.

Macroeconomic conditions in Zaire have deteriorated progressively since the decline in international commodity prices in the mid 1970s, particularly for copper and cobalt. The abortive program of zairianization, implemented in 1973-74, transferred control from foreign owned and managed firms to poorly trained Zairois, who in many instances neglected, mismanaged and undermined the financial viability of those enterprises. Although ownership was later restored to qualified expatriate managers, a further blow was struck by the demonetization of 1979-80, which crippled many small and medium size enterprises. As the state of the macroeconomy has declined, so has private sector confidence in the government of Zaire and the country's economic future. The recent and precipitous erosion in the value of the Zaire on the parallel market has further contributed to private sector pessimism and greatly complicated any prospects for stabilization and later growth.

The macroeconomic environment is bleak and recovery will be a long and arduous process, requiring debt rescheduling, massive resource transfers from multilateral and bilateral donors, greatly improved macroeconomic planning and management, better design and implementation of ongoing and future projects, and far greater financial discipline. While the public sector has performed less than optimally during the past decade, poorly managing funds and resources and exacerbating scarcities, the private sector has performed surprisingly well under some of the worst business conditions in the world. Private firms have continued to provide agricultural inputs, market

agricultural commodities, supply consumer goods, and in some instances maintain the collapsing transportation and marketing infrastructure in the face of acute shortages and often bothersome government intervention. In servicing the rural areas private firms have sometimes established monopolies or monopsonies. Farmers and small traders accuse the larger firms of unfair practices. Yet the private sector has supplied urban areas with foodstuffs and participated in the market of cash crops that earn foreign exchange with greater efficiency and at lower cost than the public sector is capable of doing.

Constraints to Increasing Agricultural Production and Marketing

The Small Farmer Marketing Access team found common themes in conducting rapid assessments of agricultural production and marketing constraints. The principal constraints to production are presented in Table 1 and constraints to marketing in Table 2. The most constraining factors to increasing food crop production were found to be:

1. Inadequate supply and distribution of seed, and the absence of commercial seed production and distribution.
2. Scarcity of agricultural implements in some areas.
3. No use of modern agricultural inputs, such as fertilizers, insecticides, herbicides, animal traction or mechanical inputs (tractors, tillers, pumps, etc.).
4. An underfunded and poorly trained extension service, generally lacking any improved packages to extend to farmers. As enforcers of minimum acreage requirements, extension agents typically have bad rapport with producers.
5. Land degradation through uncontrolled soil erosion, slash and burn agriculture, and abandonment of crop rotation in some areas.
6. Labor shortages in areas near large cities or where returns to alternative enterprises (gold and diamond prospecting, smuggling of coffee and consumer goods) are significantly higher than returns to farming.
7. Irregular evacuation of food crops from certain production zones, particularly in more isolated areas. Spoilage is high and produce is not marketed during some years. Uncertain market access is a disincentive to

COGNATE OF MAJOR CONSTRAINTS TO PRODUCTION IN SELECTED ZONES OF SAHARA

TOPIC	MOUZOLO	KIVU	LUPEA	CELEA (SANGHELO)
EXTENSION Status of extension services at levels of production and marketing.	Extension agents are grossly underpaid and lack transport so little field work. ICR research station has few new results to disseminate but agents are active in field promoting seeds. District agents are restricted to improved cotton culture. No one exists in marketing.	Extension for cattle producers is provided by ADOGHEI, INEFA conducts research and extension near Lubero.	Extension systems virtually nonexistent.	CELEA will oversee and coordinate the activities of extension networks established by the ICR, missionary groups and rural development projects. Extension services promised to be better trained and managed, and able to provide improved production practices.
LAND UNDER CULTIVATION Extent to which areas planted are increasing and obstacles to increasing areas under cultivation.	Increasing land is a function of available labor to clear and cultivate and distance from village/access to roads. Producers face trade-off between improved culture/cash needs vs. binding constraints of self-sufficiency for family. Allotments of land use conflict in more easily accessible areas.	Increasing land under cultivation is seriously constrained by high population densities (particularly in South Rive, near Lubero), heavily forested and mountainous terrain, and poor access to areas far from the major towns. Potential conflict in some areas of North Rive due to very good prospects for food-crops, cash crop and livestock production. In the future difficult decisions may be faced with regard to use of land for crop or livestock production. At present not a pressing problem.	Increasing land is a function of available labor to clear and cultivate and distance from village/access to roads. Producers face trade-off between improved culture/cash needs vs. binding constraints of self-sufficiency for family.	Competition for use of relatively fertile hilllands in high overwash areas. Population pressure and declining soil fertility inducing farmers to clear new land for cultivation, particularly in forested areas. Resulting deforestation could have a negative long term environmental impact.
LABOR Sources, uses, competing demands on labor	Men clear forested areas to put new land under maize cultivation and participate in harvest. Women perform most other agricultural tasks (planting, weeding, harvesting) and household chores, and carry agricultural produce from field to market. Few off-farm employment opportunities.	Agricultural labor supply contracting due to higher returns from gold mining and commodity trading. Rural to urban migration around Lubero worsening food supply situation. Poor nutrition constrains agricultural production in some areas of South Rive.	Men clear forested land for upland rice production and participate in harvesting. Women perform most other agricultural tasks. Few off-farm employment opportunities. Male culture poorly remunerated.	Men clear forested land for food crop cultivation and participate in harvesting, weeding and livestock raising. Women perform most agricultural and household chores. Migration from rural areas to secondary centers (Lubero) and Lubero reduces agricultural labor forces but provides some employment opportunities for young males. Urbanization of males results in women undertaking some agricultural tasks reserved formerly for men. Poor nutrition constrains agricultural production in some areas. Low returns to palm nut cutting have led to domestic declines in palm oil output.
SEEDS Extent to which improved seeds are being used and the channels of distribution.	ICR has effectively promoted improved seeds (maize 1) but these are heavily self-sown. Potential for commercial seed market hindered by adverse terms of trade against agriculture.	INEFA contacts trails using different varieties of maize, sorghum and legumes, but improved seeds not widely distributed in Kivu. Vegetable seeds produced from various sources (private firms, cooperatives). Artificial insemination practiced by large-scale cattle producers. Active cross-breeding program. ADOGHEI distributes seeds for upgrading pastures.	Predominant variety (744) produced by ICR is degenerating leading to low yields and low quality. ICR lacks operating funds and equipment to address. Millers regard seed research as ICR function. No commercial seed market exists.	CELEA working with CELEA to improve maize varieties. CELEA conducting maize variety trials. ICR station at Lubero underfunded and not meeting regional need for rice seed. CELEA and missionary organizations striving to improve distribution of seed.
LEVEL OF TECHNOLOGY Use of modern inputs and improved production practices.	Pre-independence overwash production was technical, few producers knew forest areas where hard weeding is less difficult. No modern inputs. Traditional rotation system. Arduous and labor-intensive field clearing in forest areas. No animal traction.	Small holders' coffee declining in quality due to limited use of insecticides and deteriorating processing units. Intensive cultivation of foodcrops on hillside leads to erosion. Cattle producers rapidly adopting improved technologies such as cross-breeding, pasture improvement, regular vaccination. No animal traction.	No modern inputs, productivity declining 70% at least and if disease/inputs are significant. Traditional rotation system. Arduous and labor-intensive field clearing in most areas, which are heavily forested. No animal traction.	Slash and burn agriculture and cultivation on hillside has led to increased erosion, which exacerbates problem of low soil fertility and erosion. Three-crop rotation (maize, sorghum, maize) practiced in many areas. No animal traction. Some experimentation with cattle cross-breeding, improved pasture production, planting of clover, dipping and mineral supplementation.

ment and an emphasis on regulating rather than facilitating agricultural production and marketing undermines confidence in government institutions at the local level. The government is viewed increasingly as an adversary.

The Need for Interventions that Support Private Sector and Local Initiatives

While it is not difficult to identify constraints to agricultural production and marketing in Zaire, the design and implementation of interventions to alleviate these constraints is exceedingly difficult in the present macroeconomic and policy environment. Rather than prescribe specific interventions, the SFMA team will offer some general counsel and words of caution.

In each of the four regions it visited the SFMA team was impressed with the dynamism of the rural population and the capacity of private firms to move and transform goods under difficult sets of circumstances. In contrast, public sector agencies, including the agricultural extension service, the Office des Routes, ONATRA and SNCZ, local offices of Economic Affairs, and parastatal marketing agencies, performed rather poorly. To be fair, it is important to note that public agencies receive less than adequate support from the central government in the form of funds, material, training, supervision and incentives. Yet given the existing perverse set of incentives facing GOZ officials, which encourage financial mismanagement and poor job performance, it is impossible to expect major improvements in public sector accountability and performance in the medium run. USAID is therefore encouraged to work closely with local institutions (cooperatives, missionary groups, ANEZA chapters), PVOs and the private sector in tackling agricultural production and marketing problems. Marketing interventions lend themselves well to private firms in Zaire which move food crops from farmgate to market, process agricultural products, and distribute agricultural inputs and consumer goods. Moreover, private firms maintain a good proportion of the rural roads in Zaire through contracts with the Office des Routes, access to the Fonds de Relance Economique and self-financing. By ensuring adequate road maintenance, private marketing agents reduce marketing costs, increase capital turnover and volume of produce buying, and establish good rapport with the rural population served by these roads.

In promoting the development of agricultural marketing in a particular region, USAID should make its assistance conditional upon greater indirect and direct resource transfers to private firms and local organizations. Devising new arrangements and institutions for channeling aid will require imagination, care, and skill in

negotiating. Private firms should not be allowed to generate and determine the use of funds without supervision, as in the case of the Fonds de Relance Economique. Careful monitoring of resource flows and training in financial management will be necessary in order to hold aid recipients accountable. And it is in the areas of training, management and financial analysis that USAID enjoys a comparative advantage.

In many regions of Zaire rehabilitation of existing roads and improvement of feeder road networks will lead to increases in marketed output. These increases will result from greater incentives to produce. Greater availability of agricultural inputs and consumer goods, increased competition among buyers, and higher agricultural prices (resulting from transporters' cost savings and greater competition) will provide adequate incentives. In a period of declining agriculture commodity terms of trade, however, the effect of increased commercial activity on rural households' nutrition will need to be monitored carefully. While road rehabilitation and construction are not panaceas, improved access will facilitate increased agricultural production and marketing in many areas of Zaire, which are presently serviced irregularly or not at all by private marketing agents.

In order to enable small and medium size private firms to benefit fully from improved access, USAID will need to provide medium term investment and short term agricultural buying credit. The existing financial institutions, particularly the BCZ and SOFIDE, funnel most of their credit to large, well-financed firms. Although these larger firms could use more funds (and they do provide useful marketing services), access to credit does not constrain their activities to the extent that it does smaller firms. Hence, USAID should seek to complement those financial institutions that assist larger firms. By designing institutions that improve small traders' access to vehicles, spare parts, fuel, storage facilities and funds for agricultural buying USAID will help to increase competition for produce. This will help to discipline larger firms, who collect monopoly rents in rural areas where they are the sole buyers and sellers. At the same time that smaller firms obtain better access to formal credit, USAID will need to train these firms in financial management, as well as to monitor closely the loan disbursement and repayment process. Such interventions are necessarily USAID-resource intensive and entail higher management costs, but the investment in human capital development in the private sector has a high potential payoff. PVOs such as the Peace Corps and AFRICARE could be contracted to provide the necessary technical and managerial resources. Missionary organizations could also help.

17

USAID can most effectively intervene in agricultural marketing in Zaire by concentrating its scarce resources in one or two regions, preferably where USAID projects are already underway. Interventions that seek to improve rural and feeder roads, provide short and medium term credit and management training to smaller marketing agents, monitor rural household nutrition, and improve distribution networks for seed, agricultural implements and consumer goods have obvious complementarities that will reinforce the agricultural development process. While the primary objective of USAID interventions should be to improve the livelihood of rural producers in Zaire, an important, albeit secondary objective may be to improve the food supply situation in large urban areas. The proximity of regions such as Bandundu and Bas Zaire to Kinshasa, and of North Shaba to Lumbumbashi and other cities in the copper belt, is advantageous in that it permits satisfaction of the above two objectives.

Structure of the Report

Each of the separate regional marketing reports and the transport consultant's report appear as individual annexes. The transport annex (no. 1) describes the transportation systems in three of the four regions visited (excluding Kwilu Subregion), identifies transport constraints, and prescribes interventions in the transport sector that merit USAID examination. Annex 2 analyzes maize production and marketing in North Shaba and discusses constraints to increasing production and improving marketing that still exist after five years of USAID intervention in the North Shaba Development Project. Annex 3 examines agricultural marketing in the area around Bukavu (South Kivu) and in North Kivu. Special attention is devoted to marketing of high value produce, such as vegetables and beef, to urban markets in other regions of Zaire (principally Kinshasa). Annex 4 analyzes rice production and marketing in the Bumba zone, identifies constraints, and prescribes means for alleviating these constraints. Annex 5 examines marketing of a broad range of staple crops from Kwilu Subregion (Bandundu) and discusses issues of institutional coordination and jurisdiction in a region where a number of projects are currently underway. The last annex (no. 6) describes agricultural marketing in the Kinshasa food shed and discusses the applied research programs on marketing conducted by several organizations.

12

STUDY OF SMALL FARMER MARKETING ACCESS TRANSPORT SYSTEMS AND CONSTRAINTS

Trip Report, March 10-March 25, 1983

KONGOLO-NORTH SHABA (March 10-15)

BUKAVU-SOUTH KIVU (March 15-17)

GOMA - NORTH KIVU (March 17-21)

BUMBA - EQUATEUR (March 21-25)

By Grace W. Finne, Consultant

Objectives

The objectives of the transport reconnaissance of selective marketing centers were: - To obtain an overview of existing transport systems for marketing of agricultural commodities.

- To identify transport constraints in marketing of agricultural commodities.

- To indicate transport improvement projects within the overall framework of A.I.D. programs for Zaire.

- To make a preliminary ranking of alternate transport projects according to perceived benefits for marketing of agricultural products.

I. Kongolo - Nyunzu area1. Overview of existing transport system for marketing of agricultural commodities1.1 Transport of Corn

Corn is the most important agricultural commodity marketed from the Kongolo-Nyunzu area to major consumption centers. These centers are mainly located in the South Shaba industrial belt, including Lubumbashi, Likasi and Kolwezi. The marketing season starts in April, which also marks the beginning of the dry season. Marketing of corn ends in September. The rainy season usually starts in November. The fact that corn is marketed in the dry season has the following transport implications:

- Agricultural feeder roads are passable even with a minimum of maintenance effort.

- Trucks registered outside the corn production area may reach the area by national roads in spite of the generally poor condition of these roads.

- Corn can be stored in the open at village collection centers and at railheads awaiting rail transport to South Shaba.

1.12 Women carry headloads of corn cobs from the fields to the village collection centers. A headload of corn weighs up to 30 kg. The distance from the fields to the village center range up to about 25 km. Fields are widely scattered because of crop rotation. The average distance from fields to village is increasing as remote forested areas are cleared for corn production.

1.13 At the end of March, agents of large flour mills and corn merchants deliver bags by truck to the village centers. Major buyers agree among themselves as to what territory of villages to cover. During the harvest season starting mid/April, agents return to buy the bags of corn which are carried by truck to their "counters" in Nyunzu and Kongolo. When railroad wagons are available, the corn is trucked to the nearby railheads for loading.

1.14 The state owned railway (SNCZ) carries corn from Nyunzu and Kongolo to the mills in South Shaba. A small percentage of corn is milled in Kongolo for local consumption and for sale to Lubumbashi. About 10% of the corn is carried by rail or by truck to Kalamie and other destinations such as Kasai. A permit is necessary for sale of food outside Shaba.

1.15 Characteristics of Truck Transport for Corn Marketing

A trucking fleet of 80-100 trucks transported corn in the Nyunzu-Kongolo area during the 1982 harvest season. About the same number of trucks are expected to be available for the 1983 buying season. Most of the trucks are owned by large flour mills such as Tarica Freres, or by large merchants in South Shaba and Kalamie. These trucks leave the area after the corn buying season. Only 25-30% of the trucks are owned by merchants residing in Kongolo. The most common truck type utilized for corn transport is a 7-ton Toyota diesel. Trucks are generally less than 3 years old. The nominal capacity of a 7-ton truck is 70 bags of corn. However, bags frequently weigh 25-30% above their nominal weight of 100 kg, and trucks are generally overloaded. The overall capacity of the trucking fleet has expanded during the 1979-83 period to meet the demand for corn transport. The average utilization of each truck during the harvest season has increased, due to a reduction in transit time on improved access roads, particularly by the improvement of water crossings, where trucks formerly ran a high risk of being stuck or forced to detour. In order to perform the buying/transport function as quickly as possible, agents of major buyers transport corn only. Smaller merchants however, tend to bring consumer goods to villages to sell to farmers after buying their corn.

P.N.S. Truck Leasing

1.16 During the 1982 corn harvest, Project North Shaba (PNS) leased five trucks to local cooperatives and small merchants to enable them to participate in the purchase of corn at village centers. The truck rental

charge for a 5-ton Ford diesel was Z 14. per truck-km. During the 1983 season, FNS is planning to lease trucks at Z 18. per truck-kilometer. To illustrate, the rental charge for roundtrips of 60-120 km will range from Z 1,080 to Z 2,160. On the way to the village center, the leased truck will probably carry consumer goods and passengers. If roundtrip transport costs are attributed only to the one-way payload of corn however, the average charge will range from Z 135-/t to Z 270/ton with a load of 8 tons including overloading. By comparison, the tariff charged by major merchants is Z 250-/t for trucking distances of less than 60 km and Z 300-/ton for distances above 60 km. The rates are set at Z 25 per bag at 100 kg for distances of less than 60 km and Z 30/bag beyond 60 km. Even at the higher rental charge for 1983, FNS rentals are below the tariffs for corn transport charged by major merchants when the roundtrip distance is below 111 km, with the built in bonus of being able to use the truck for other goods on the trip to the villages. Renting trucks from FNS is therefore very attractive to smaller merchants wanting to participate in corn marketing.

The price of corn at the "counter" of larger merchants reflect the transport cost and the cleaning and weighing of corn. However the mark up of about Z-500t also includes a substantial profit margin. The table below gives prices during the 1982 buying season.

Corn prices 1982 season
at Farm gate and at the
"counter" of major buyers in
Kongolo and Nyunzu

Zaire per Kg

1982	<u>Kongolo</u>		<u>Nyunzu</u>	
	<u>Farm gate</u>	<u>Counter¹</u>	<u>Farm gate</u>	<u>Counter¹</u>
June	1.00	1.50	1.00	1.50
July	1.20	1.65	1.00	1.65
August	1.30	1.80	1.10	1.80
September	1.50	2.00	1.30	2.00

Source: Rapport Annuel, 1982, FNS Sous-secteur d'Assistance a la Commercialisation Cit. Mpunga T.T.

(Feb. 3, 1983)

¹ Counters in Kongolo:

Tarica Freres (Lumbumbashi)
Kibwe Sakina (Kongolo)

Counters in Nyunzu

Minoka (Likasi)
Kibwe Sakina (Kongolo)
Amato Freres (Lumbumbashi)
Promilu (Lumbumbashi)
Solbena (Lumbumbashi)
Kaleng Muteba (Kamina)
Kateng Mutumbo (Kamina)
SNCE (Kamina)

1.17 Truck Transport Costs

The high cost of truck transport in North Shaba is due to the following main factors:

- High initial cost of vehicles
- The difficulty of obtaining foreign exchange at the official rate to purchase vehicles and spare parts
- Average economic life of trucks of about two to three years when utilized on unpaved roads
- Extended down periods for repairs because of lack of spare parts
- High cost of fuel and difficulties in obtaining adequate fuel supplies

The cost to PNS of diesel fuel (March 1983) is Z 3.50/liter. At the pump in Kongolo, the price of diesel is Z 12.50, when it is available. At the parallel market, the price is Z 17.20-20.00/liter, based on Z 3,500-Z 4,000 per barrel of 200 liters.

1.18 Impact of PNS road program on truck transport

Road and bridge improvements achieved by PNS have reduced average truck operating costs in the project area by:

- improving truck utilization
- reducing wear and tear on vehicles

After rehabilitation of main roads and access roads in the Kongolo - Nyunzu area, trucks are able to make speeds of 30 km - 45 km/hour, compared to 5 km - 25 km/hour before the start up of the PNS.

Road improvements have also extended the radius of corn marketing from about 30 km from the railhead in 1975 to nearly 100 km from the railhead in 1982.

1.19 Impact of road improvements on corn production

The lengthening of the radius of truck pickup from the railheads and the certainty to the farmer that his corn will be sold are key factors in the attainment of a volume of 30,836 tons of corn shipped from the PNS area in 1982. Other factors contributing to the increased production were:

- extension of the area under cultivation
- increased input of labor by farmers and hired workers
- production incentive of higher prices for corn at the farmgate

2. PNS road improvement program

As of March 1983, Project North Shaba had improved about 600 km of rural roads in the Kongolo - Nyunzu area. Roads of priority interest had been reshaped and regravelled. Drainage had been provided and culverts and bridges constructed. Agricultural access roads had been cleared of vegetation, and water crossings were repaired or reconstructed. Details of this program appear in Annex I. PNS maintains the roads previously rehabilitated with equipment. In addition, some manual maintenance is contracted through Estagrico. (See maps 1 and 2)

2.12 The PNS road program for 1983

Road works are scheduled to start by April 15, 1983. The reasons for the late start, are as follows:

- shortage of fuel
- work performed by the bridge construction unit to build the Ngaba research station at Mbulula.

The 1983 work program (April 15-Nov 1) includes:

- a) improvement and repairs to 7 bridges and construction of 4 bridges. The bridges to be constructed range from 5 - 12 meters and will be made of concrete. A 12 meter bridge will span the Luvilu river on the road Mbulula-Makutano.
- b) Reshaping and installment of steel culverts on 91 km of agricultural roads.
- c) Blading of 56 km of roads previously opened (Kilubi-Kateba-Makutano).

For details of the 1983 road program, see Annex II.

2.13 Road program by Office des Routes

Complementary to the PNS road improvement program, and spurred by PNS are road improvements carried out by Office des Routes (OR). The axis road linking Kongolo with Nyunzu (180 km) was rehabilitated in 1982 except for a 20 km section of this road on the segment between Pende and Kabaya-Mayi bridge. According to the Chief of the OR road unit in Kongolo, further rehabilitation on Route 631 between Kongolo and Nyunzu will be undertaken in 1983. The OR engineer also expected the sunken ferry at Nyemba to be back in operation before the 1983 corn buying season, which will facilitate trucking to and from Kalemie. In 1983, the OR will also start improving route 631 on the West bank, from Kongolo to Katea. OR in Lubumbashi is in charge of all road works for Shaba. The World Bank has supported OR from its inception with technical assistance and funding for rehabilitation and maintenance. Local funding however, has been eroded by inflation.

2.14 Field inspection was of selected PNS roads.

Keba*-Sola (27 km) This important corn evacuation road is now in good condition with gravel surface treatment and γ 1 drainage. Average speed on the road is now 40-45 km/hour this road was in very poor condition when inspected in November 1975. At that time the road had no drainage, was badly eroded and was dangerously slippery when wet. The speed obtained in 1975 ranged from only 5 km - 25 km/hour. The Keba-Sola road was the first road to be built by PNS in 1979. This road is maintained by PNS.

Keba-Kahanga-Nonge-Mukoko (about 40 km). This access road is about 3 meters wide and is an earth road without gravel. Drainage culverts had been installed. Vegetation was covering the center of the road and was encroached from the sides.

Ngaba - Route Nationale 631 - Luvilu river (about 26 km). The section from the Ngaba research station to the main road (Route Nationale 631) was a good gravel road. The agricultural access road to Luvilu river (towards Makutano) is rather rough, in part overgrown and about 3.5 m in width. Upgrading of this road will take place in 1983 in connection with the construction of a new bridge at Luvilu river.

2.15 Field inspection of Office des Route roads

Main road: Kongolo-Mbulula (60 km)

Office des Routes improved this section of Route Nationale 631 in 1982 by grading and regravelling. Good gravel is available locally. The road was also widened to a uniform width of 6 m. This road section is now in good condition permitting an average speed of 45 km/hour. The 400 m joint road and rail bridge east of Kongolo spanning the Lualaba river, is a single lane span with a rough riding surface on the non-ferrous sections. SNCZ has the maintenance responsibility for this bridge but performs no maintenance. All traffic is controlled by the military at the Kongolo end of the bridge.

Main road: Kongolo-Kaseya (36 km)

This road section of Route National 631 on the west bank has been narrowed by encroaching vegetation to about 3.5 m. The riding surface is rough permitting average speeds of only 15 km/hour. The road has no crown and no drainage ditches. Water crossings are made of steel. Office des Routes is planning to rehabilitate this road in 1983. The continuation of this road, Kaseya to Kateka, is reportedly in even worse condition than the section inspected.

*Keba marks the junction with national route 631 at 5 km east of Kongolo.

2.16 Estagrigo* Agricultural Roads

Cotton access road on the west bank are maintained by Estagrigo by hand labor (cantonnage). Each road worker is responsible for maintaining 2 km of access road. His salary is Z 150/month paid from Fond de Relance. The maintenance on the access roads inspected appeared satisfactory. The road surface on these Estagrigo roads was better than as the main road Kongolo-Kasaya. The Estagrigo roads inspected were however, in flat terrain with sandy soil and presented no difficulty in road maintenance. Estagrigo presently maintains a considerable network of cotton evacuation roads on the West Bank. Estagrigo also directs manual maintenance on some of the PNS agricultural access roads on the right bank (see maps).

2.17 Road Traffic. Outside the corn harvest season, traffic on the main roads and agricultural roads is very light. Harvesting of cotton, peanuts, palm oil and soybeans create some truck traffic. In the dry season, some trucks pick up passengers at villages and carry a load of standing passengers to Kongolo center. PNS vehicles and missionary vehicles are other sources of traffic. No traffic counts have been taken by OR or PNS.

2.18 Non-motorized road traffic

Bicycles were noted on all roads surveyed. Bicycle traffic has increased many fold from the level before the PNS project. Bicycles are used in the Kongolo-Nyunzu area to transport baskets of agricultural produce, chickens, wood, kerosene and various household items. A new bicycle costs Z 2000. - in Kongolo. The increase in bicycle ownership reflect the higher cash income of farmers from increased sales of corn. Bicycles transport is assisting the transport function of farm women carrying headloads to and from the market. Headloads are still dominant for everyday marketing of quantities up to 30 kg. Transit time by foot to Kongolo from villages adjacent to the Kaba-Sola road range up to 4 hours.

2.19 The SNCZ rail transport

SNCZ evacuated 31,000 tons of corn from North Shaba in 1982 in spite of shortages of wagons and locomotives and generally run down material. As of March 1983, SNCZ had only 8 line locomotives in service on the Shaba system. Freight trains are organized during the corn harvest season at Nyunzu and Kongolo as wagons and locomotives are available. Box cars are of 40 tons capacity. Rail tariffs are authorized by the Ministry of Transport. As of March 1983, the SNCZ tariff for corn from Nyunzu to Lubumbashi was Z 376.83/ton, when shipped in full wagon loads (40 tons). The distance by rail Nyunzu - Lubumbashi is 1570 km. The equivalent charge is thus Z 0.24 per ton kilometer, which is very reasonable and probably below average operating costs.

*Estagrigo is a Belgian/Zairian cotton company on the left bank, a subsidiary of the Filtisaf cotton mill in Kalemie. About 60% of the cotton fiber is sold to Filtisaf and 40% to Lubumbashi mills. Cotton is transported in Estagrigo trucks and shipped by rail to the mills.

It appears likely that SNCZ will again be able to transport the 1983 commercialized corn harvest in the Kongolo-Nyunzu area which is expected to be about 32,000 tons. However, delays in shipment because of the shortage of locomotives must be expected.

In order to cope with increased traffic SNCZ must overcome the following constraints:

- shortage of motive power and rolling stock
- overall deficit operation
- low operating efficiency, particularly slow turnaround of wagons
- inefficiency of transfer points for cargo (rail/water)
- speed restrictions and derailments due to poor condition of tracks
- difficulty in obtaining spare parts for locomotives

SNCZ has been aided by a World Bank (International Development Association) credit of US \$20 million extended in 1979. This credit was particularly aimed at rehabilitating locomotives by providing spare parts and improving the efficiency of rail/water transfers at Ilabo. However, the project must be redesigned and refinanced, because Arab co-financing was withdrawn in 1982 when Zaire officially recognized Israel.

German bilateral assistance currently sponsors a project to furnish spare parts for SNCZ light locomotives of German manufacture. These locomotives are normally in use on the Kalemie line. SNCZ has been using heavy main line locomotives also on the Kalemie line, because these were the only locomotives available. The use of heavy locomotives implies reducing train speeds. These heavy main line locomotives are manufactured by General Electric.

2.21 SNCZ Water Transport

SNCZ operates water transport services on the Lualaba river from Malemba in the south to Ubundu in the north. At Kongolo, an old wood burning, wheel driven river boat calls about once a month. It carries wood and other low value commodities. Traffic is insignificant.

2.22 Air Transport

The air strip at Kongolo is gravel and 1,600 m in length. The PNS single engine aircraft is parked in a small hangar. Air Zaire makes a few landings at Kongolo during the summer months. Occasionally, light aircrafts which are chartered for AID and missionary aircrafts land at the air strip.

II. KIVU

3.11 Road Transport

The constraints of poor roads and high truck transport costs severely hamper marketing of agricultural products in Kivu province. Impassable roads isolate many areas during the rainy season. Bad roads and long distance have created a situation where air transport has become the only transport mode for products sold to Kinshasa. The following factors aggravate the poor condition of many important road links:

- High annual rainfall, particularly in South Kivu, render many roads impassable for most of the year. In Bukavu the rainfall exceeds 2,200 mm/year.
- Mountainous terrain in the eastern regions imply steep grades (7-9%) narrow curves and danger of slides.
- In the center and western parts of Kivu, numerous water crossings and dense rain forests make roads vulnerable to floodings and to encroachment of vegetation.

3.12 Bukavu - Kinshasa

The shortest routing of surface transport from Bukavu to Kinshasa is by road to Kisangani and by river to Kinshasa. However, the direct road Bukavu - Kisangani (752 km) is impassable because of the deteriorated state of the segment Walikale - Lubutu (228 km) Road traffic Bukavu - Kisangani must therefore be routed through Goma, Beni and Bafwasende a total road distance of 1,460 km.

Bukavu - Goma	Km	200
Goma - Beni		400
Beni - Kisangani		<u>860</u>
Total road	Km	1,460

The distance by river transport Kisangani-Kinshasa is 1,734 km. By surface transport, the distance Bukavu-Beni-Kisangani-Kinshasa totals 3,194 km.

The European Economic Community has a current project to finance reconstruction of the Walikale-Lubutu road to paved road standard based on a technical study by the German engineering firm Gauff. As of March 1983, the contractor had not yet been selected. When finished, Bukavu will be able to sell food to Kinshasa by road and river surface transport covering 2,486 km.

3.13 Marketing of Food in the Bukavu Area

Daily food supplies to Bukavu, a city of about 300,000 people, are carried by headload to a wholesale market and then by truck to the city. Most

of the food supplies originate within 50 km from the city. The price of food in Bukavu is relatively high because supplies come from such a limited area and because of the high cost of truck transport. Cheese, butter and coffee produced in the Bukavu area are transported by road to Goma and by air Goma-Kinshasa.

3.14 Axis road Bukavu - Goma

The road Bukavu-Goma (200 km) is part of national route No. 2. Office des Routes has worked on the road for the last 4 years with German technical assistance. A section south of Bukavu airport towards Bukavu has been paved. Another section north of Bukavu airport has been improved to a good gravel road. About midway between Bukavu and Goma a mountainous section of about 70 km is in poor condition. The surface is rough with large rocks and deep ruts. Poor drainage and erosion has resulted in wash outs of road materials down to the sub base. On this section, a four wheel drive vehicle must slow down to 5 km - 15 km/hour. The last 50 km of the road to Goma is in good condition and partly paved. Total transit time in a 4-wheel drive passenger vehicle is 6 1/2 hours - 7 hours, or an average speed of about 30 km/hour. Traffic on the road consists predominantly of truck traffic. The most common type of truck observed was Mercedes-Benz of 25 ton capacity. The truck tariff Bukavu - Goma is Z 660/ton.

3.15 Main roads and national transport connections to the south and south west of Bukavu

The main road to the south, Bukavu - Uvira (192 km) was described by the owner of a major transport company to be in poor condition. At Uvira, SNCZ lake transport to Kalemie (345 km) connects to the SNCZ railway Kalemie - Kamina - Ilebo (1,691 km) and river transport by ONATRA: Ilebo - Kinshasa the distance by this multi-modal route is 3,420 km. With three transfer points, this route is not very practicable. The road Bukavu - Kasongo was described by Office des Routes (OR) as being in poor condition. OR is planning a new bridge at Kilungutwe on the section Bukavu - Mwanga. OR is also planning to construct a new bridge of about 20 meters across the Luika river to the South East of Kasongo. This bridge will connect to the road Kongolo - Kaba - Sola in the area of project North Shaba.

The main road Bukavu - Kindu is also described by OR as in poor condition and impassable in the rainy season - Kindu is the northern terminal of the SNCZ railway branch line Kabalo - Kongolo - Kindu.

SNCZ operates infrequent river transport service Kindu - Ubundu and rail service Ubundu - Kisangani.

3.16 Road transport in the Goma area

Main agricultural producing areas are located to the north west and north of Goma, particularly the areas of Masisi, Rushuru, Lubero, Butembo, and Beni. The road Goma - Masisi (61 km) is paved as far as Sake, which is the junction with the road to Bukavu. The priority regional road from Sake to Masisi (38 km) is in poor condition, which hampers deliveries from this fertile agricultural area to Goma. The continuation of this road west of Masisi to the town of Walikale (152 km) is also in very poor condition. Timely rehabilitation of the Sake-Walikale road (about 190 km) would not only induce agricultural production in the Masisi area for products to be marketed through Goma, but would also constitute the most direct way of connecting Goma to Kisangani when the Walikale-Lubutu road is reconstructed. Nonperishable, low value agricultural products from Masisi could then also be sold to Kinshasa. North Kivu might develop into a "bread basket" for Kinshasa with a good road to Kisangani and cheap river transport to Kinshasa. The improvement of the road connection Goma-Kisangani is listed, as a national priority in the Mobutu Plan: "Programme Routier 1982-1984" (March 1981).

The axis road, Goma-Beni (427 km) deteriorates to very bad condition on the last 55 km segment from Butembo to Beni, but is also in poor condition south of Butembo. The large transport company TMK (Transport et Messagerie du Kivu) can only use trucks of 8 tons capacity Goma-Beni and average transit time is 2 days. The tariff charged by TMK to transport agricultural products Butembo-Goma is Z 1155/ton and Beni-Goma Z 1340/ton (March 1983). The base tariff is Z23.30 per ton km.

3.17 Transport of fuel to GOMA

TMK has a contract with Petro Zaire to transport petroleum products from Kenya. Normally the fuel is imported through Mombasa, brought to Nairobi by pipeline and to Eldoret in North West Kenya by Kenyan trucks. TMK tank trucks of 20-30 cubic meter capacity transport fuel from Eldoret (Kenya) via Kampala (Uganda), entering Zaire at Ichasa. The road is in extremely bad condition for about 61 km on the Uganda side of the frontier and 90 km within Kivu. The distance from Eldoret to Goma is about 1000 km and transit time varies from 10 days to 30 days. However, no transport is possible during the worst part of the rainy season, about four months. Goma has no storage facilities for fuel, and shortages of fuel are severe during the rainy season.

In order to transport fuel from Eldoret, TMK has to pay a transit tax of 700 shillings to pass each border. Each truck must also pay a transit tax to Kenya of 1000 shillings every three months. Trucks are frequently delayed by military patrols in Uganda.

Fuel is not always available in Eldoret because Kenya does not import sufficient quantities. In Goma it is rare to find fuel at the official price; most fuel is sold at the rates of the parallel market. On the parallel market diesel fuel is sold for about Z 15/liter and gasoline at Z 40/liter.

SNCZ lake transport on lake Kivu

3.18 SNCZ operates freight and passenger services on Lake Kivu between Goma and Bukavu with intermediate stops at several islands. The distance by water between Goma and Bukavu is only 108 km or about half of the road distance. SNCZ had 5 vessels in lake service as of March 1983. This fleet consisted of one pusher capable of pushing 4-5 barges ranging in capacity from 200-300 tons, two self-propelled freighters of 70 tons capacity and two passenger boats with capacity respectively of 115 passengers and 45 passengers. Operational problems include difficulty of obtaining diesel fuel and old equipment with frequent breakdowns. Eight vessels were out of service as of March 1983.

3.19 Lake Traffic

About 22,000 tons were transported by SNCZ vessels on Lake Kivu in 1983 in both directions. Main commodities unloaded at Goma included beer and sugar. Main products loaded at Goma were corn, beans and empty bottles. Commodities regularly transported, but in smaller quantities, included palm oil, tea, coffee, manioc, quinine and cement.

Lake Traffic Port of Goma 1982

Tons

<u>Month</u>	<u>Loaded</u>	<u>Unloaded</u>	<u>Total</u>
January	598	705	1,303
February	1,006	786	1,792
March	724	1,321	2,045
April	893	1,286	2,179
May	840	1,083	1,923
June	600	857	1,457
July	841	1,216	2,057
August	680	1,175	2,055
September	1,129	640	1,769
October	945	779	1,724
November	537	996	1,583
December	<u>1,527</u>	<u>1,002</u>	<u>2,529</u>
Total	10,570	11,846	22,416

Source: SNCZ Goma, March 1983

3.20 SNCZ tariffs for lake transport

SNCZ tariffs for lake transport are divided into 13 categories of commodities.

Representative tariffs for main commodities transported from Goma - Bukavu are:

Lake tariff Z/ton

Corn, manioc, beans	46.90
Beer (5 cases per	150.00
Coffee, tea	703.19

In addition, the SNCZ charges Z 22.83/t for loading and the same fee for unloading. Compared to an average truck tariff of Z 660/t quoted by TMK, lake transport is considerably cheaper for food and for beer transport, while truck transport is cheaper for coffee and tea. Truck transport also includes door to door delivery.

3.21 Air Transport in Kivu

Air transport is particularly important to Kivu, linking Kivu with Kinshasa, Lubumbashi and Kisanangani. The remoteness of Kivu and the poor state of roads has made air transport a predominant mode for passenger and freight traffic. Goma has a modern airport with a paved runway of 3000 meters permitting traffic by jet aircraft such as Boeing 707. The runway at Bukavu airport is also paved, but the length is only 1600 meters. Bukavu airport is used by DC 4's and DC 3's.

3.22 Private carriers have greatly expanded their air services at Goma airport since 1979. The largest carrier, Katale operates two or three cargo flights daily from Goma to Kinshasa. Katale operates a fleet of five Britannias (March 1983). Katale entered the air transport business in order to transport coffee from its plantations and processing plants to Kinshasa. Besides coffee, Katale airlifts meat, vegetables and tea to Kinshasa. Total volume airlifted to Kinshasa in 1982 was 5,234 tons of which coffee was 31%.

Katale Air Transport:

Tonnage Transported 1982 From Goma to Kinshasa

<u>Comodities</u>	<u>Tons</u>	<u>% Total</u>
Meat	1,137	21.7
Vegetables	857	16.4
Coffee	1,617	30.9
Tea	176	3.4
Other Food	538	10.3
Miscellaneous	809	15.5
Total	5,234	100.0

Source Katale Aero Transport
Goma, March 1983

The Britannias have a rated cargo capacity of 17 tons from Goma to Kinshasa. The aircrafts carried an average load of 17.4 tons from Goma to Kinshasa in 1982. The rated capacity from Kinshasa to Goma is 11 tons because of the need to carry aviation fuel for the roundtrip. Tariffs as of March 1983 are:

	<u>Zaire/Kg</u>
Goma - Kinshasa:	4.50
Kinshasa - Goma:	10.00

Commodities transported from Kinshasa to Goma include a variety of general merchandise.

Besides Katale, private air cargo carriers at Goma include:

Interfret - operating a Boeing 707 with 30 ton cargo capacity and expecting a new Boeing 707 with capacity of 40 t

Lukas - operating a DC 4 - 8 t capacity

Vic Air Cargo - operating C144 - 20 t capacity

SCDMS - operating C130 - 24 t capacity

3.23 Air Zaire

The state owned Air Zaire operates cargo services at Goma airport with DC 8 aircraft of 30 tons capacity. Private carriers dominate freight traffic. Private carriers also compete with Air Zaire for passenger traffic between Goma and Kinshasa, offering more frequent and reliable service at a slightly higher fare. Air Zaire also operates scheduled passenger services from Goma to Bukavu (4 flights/week), Kisangani, Lubumbashi (2 flights/week) and Kindu, Kananga, Sujurubura, Nairobi (1 flight/week) with Boeing 737, B 73M, DC-8 and F-27 aircrafts. In 1982, passenger traffic at Goma airport totalled 62,596 passengers.

III. BUMBA

4.11 Main Roads

Bumba (pop 70,000) is linked to Lisala, the center of the Mongala subregion by national road no. 345. This 153 km gravel road is in fair condition. The road is maintained by Office des Routes. To the east and north east of Bumba this road connects to Aketi and Isiro in Haut-Zaire. The road Bumba - Aketi (200 km) is a gravel road with 150 km in fair condition and the last 50 km is in poor condition. The road section Bumba - Yandombo (78 km) was inspected. Although the surface was quite rough, a truck speed of 40 km/hour was possible for most of this segment.

4.12 Agricultural roads

The main rice collector roads to the north of Bumba are reportedly in very poor condition and impassable during the rainy season. Some of these agricultural roads receive a minimum of annual maintenance under contract with the rice mills. Road workers receive a salary of Z 88/month. The agricultural road to the village of Yanzane was inspected. This dirt track was passable with great difficulty. Some sections were so eroded and uneven that the truck nearly tipped over on its side, holes were up to one meter deep, and water crossings consisted of logs only. Improvement to this access road and particularly bridge improvement will be necessary in order to evacuate paddy by truck.

A pilot rice program has been established. The rice research station in Bumba (PNR) distributes improved rice seeds to the rice companies which again distributes seeds and bags to the villages. Rice paddy is picked up by the trucks of the rice companies and brought to the rice mills in Bumba. The poor condition of the access roads to villages is a main constraint to expanding rice production by cultivating more land. An inventory of access roads and water crossings was done in 1981. This inventory is attached (Annex III). According to PNR the most important agricultural roads which need to be improved are as follows:

- 1) Yandongi - Mondjamboli
- 2) " - Bilia
- 3) " - Ebonda
- 4) " - Yamongili
- 5) Ebonda - Yangola - Mioka

4.13 Truck transport in marketing

The rice milling companies buy rice paddy in a specific area in a radius of about 80 km from Bumba. The delimitation of their area of interest is determined by the Commissioner and the agronomist on his staff. The large rice mills are: Comagrin, Scibe Zaire, Griza and Nogueira. In 1981-82, the rice companies transported about 33,000 tons of paddy from the villages to their mills.

Palm oil is produced by PLZ at its plant west of Bumba. The fruit is

picked up by company owned trucks. Maintenance on these roads are done by PLZ with hand labor. The roads inspected were in better shape than the road in the rice producing area. PLZ plans to start production of latex and will begin phasing out palm trees to be replaced by rubber trees. The area served by the PLZ truck fleet will remain the same, however.

4.14 SNCZ rail transport

The Northern Region of SNCZ operates 2-3 freight trains weekly from Isiro to Bumba. This railroad was extended from Aketi to Bumba in 1964. Navigation of river boats to Aketi on the Itimbiri river was becoming increasingly difficult because of silting. The gauge of the railway is only 0.66 m. The eastern terminal of this railway is Mungbere. Total distance Bumba - Mungbere is 868 km of which the distance Bumba - Isiro is 750 km.

4.15 Constraints of rail transport

The main constraints of SNCZ rail service to Bumba are:

- shortage of locomotives
- shortage of wagons

The line has received no new equipment since 1964. Four locomotives have been fitted with new engines and are now in service. According to SNCZ in Bumba, about 10 line locomotives and a shuttle locomotive are needed. There is no shuttle locomotive at the SNCZ terminal at Bumba. Wagons on the rail siding on the ONATRA pier are pushed manually.

SNCZ wagons on the Isiro - Bumba line are of 10 ton, 12 ton and 18 ton capacity. The maximum number of wagons on freight trains is only about 12 wagons.

A further constraint is the need of track renewal. Because of the poor state of tracks in many places, train speeds are reduced. Recently SNCZ was able to acquire some second hand rails from an abandoned line at Uvira. In the next few years, second-hand rolling stock is planned to be transferred by ONATRA from Bas Zaire. This may alleviate the current shortages. According to a covenant with the World Bank, the 0.66 meter gauge railway to Mayumbe in Bas Zaire is to be phased out in 1983. As of mid April 1983, however, the Government had not taken any steps to implement the promise to close this uneconomic rail line.

4.16 Rail Traffic to Bumba

Coffee is the main commodity transported by rail from Isiro to Bumba. Coffee is transhipped at Bumba to river boats for transport to Kinshasa. Because of the shortage of locomotives and rolling stock, SNCZ cannot transport all the available tonnage of coffee. As a result, some coffee must be transported by truck on poor roads from Isiro to Kisangani for transshipment to river boats. Truck transport to Kisangani is much more expensive than rail transport to Bumba. Truck rates go as high as 2,200 zaires/ton.

Other products transported by SNCZ to Bumba include cotton, rice and manioc. The quantities of these products carried are small compared to coffee. Since coffee transport between Isiro and Bumba predominates the traffic pattern, wagons often go back empty.

During a 12 month period in 1981-82 (including the coffee harvest period), SNCZ transported 12,642 tons of coffee between Isiro and Bumba. The tariff was Z 1190/ton. This rate applies to clients using entire box cars.

In addition to the freight service, SNCZ operates two passenger trains per month between Isiro and Bumba.

4.17 River Traffic

Bumba is a regular port of call for ONATRA river transport, operating on the Zaire River from Kinshasa to Kisangani. Between Bumba and Kinshasa there are 8 regular ports of call: Lisala, Lusengo, Bala - Makanza, Mbandaka, Gombe, Lukolela and Bololo. Between Bumba and Kisangani there are 3 regular ports of call: Lokutu, Isangi and Yangambi.

4.18 Port of Bumba

ONATRA operates the port at Bumba. Private operators have their own dock to the east of the ONATRA port. The port is under utilized. Ample concrete piers are equipped with 2 fixed cranes of 5 and 6 ton capacity. A floating crane of 25 t capacity was out of service as of March 1983. Two Clark fork lifts were in service and 1 fork lift was being repaired. ONATRA has ample warehouse space within the port area. SNCZ has its own warehouse in the port.

4.19 Fleet

ONATRA operates river convoys of one pusher and up to 22 barges. Barges are of 450 t capacity and the draft is 1.40 meter. In the dry season, however barges must be loaded at less than capacity to avoid being grounded.

4.20 Traffic

ONATRA traffic between Bumba and Kinshasa has been declining during recent years because of competition from private river boats and because of the general economic slow down in Zaire.

Goods transported by ONATRA from Bumba to Kinshasa in 1981 totalled about 27,000 tons. Traffic declined to about 15,000 tons in 1982. In 1982, the main commodities transported from Bumba to Kinshasa were:

	<u>Tons</u>
Palm oil	7,802
Palmetto	2,584
Rice	1,842
Coffee	1,745

The decline 1981-82 was particularly in coffee; coffee transport declined from 7,961 tons in 1981 to 1,745 tons in 1982. This decline was due to competition from private carriers offering better service.

4.21 ONATRA constraints

A main constraint for ONATRA is the high risk of theft.

Shippers of coffee prefer to pay higher rates to private carriers to be assured that the coffee arrives in Kinshasa. The claim procedure of ONATRA requires several years. Only a fraction of the value of lost cargo is restored.

4.22 ONATRA Tariffs

As of March 1983, ONATRA charged the following tariffs for river transport from Bumba to Kinshasa for the following main commodities:

<u>Category 8</u>	<u>Z/ton</u>
Coffee, cacao, cotton	427.37
<u>Category 10</u>	
Palm Oil	312.37
<u>Category 11</u>	
Rice, corn, manioc, beans	261.07

4.23 Private River Transport

Private river transport from Bumba to Kinshasa has developed since 1979. A recent river shipping company is Transukisa. OZAC records show that private transporters shipped 3446.3 metric tons of rice from Bumba to Kinshasa. Actual total volume of shipments by private carriers may be at least twice that amount.

4.24 Air Transport

The runway at Bumba is a dirt airstrip with a length of 1,600 meters. There are no lights or navigational aids. Air Zaire operates one flight per week to Bumba, but it does not always arrive.

IV. Summary and Conclusions

5.11 Inadequate transport is a main constraint in marketing of agricultural commodities in Zaire.

When transport has been improved, production and volume marketed has expanded significantly. In North Shaba, the volume of corn marketed reached a level of 32,000 tons in 1982 compared to a low level of 6,000 tons in 1977. The improvement of about 600 km of agricultural access roads by Project North Shaba was a main factor making this expansion possible. Other important factors were the availability of improved seeds and the incentive of higher prices. To further increase the area of corn production and marketing, the PNS road improvement program and in particular the bridge construction program should be continued. At the same time a system of manual road maintenance must be established to insure that the improved access roads remain passable during the corn harvesting season.

5.12 In Goma, production of vegetables, meat and coffee has been encouraged since 1979 by the growth of private air transport services to Kinshasa. Road improvements to Masisi and other agricultural centers will undoubtedly expand the radius for delivery of food to be airlifted from Goma and more vegetables can reach consumers in Kinshasa.

5.13 When construction of the road link from Walikale - Lubutu is finished (project of the European Economic Community), Bukavu will be linked by a direct road to Kisangani. Surface transport of nonperishable commodities to Kisangani and Kinshasa will then be feasible, with about two days transit time by road and about a week transit time for river transport from Kisangani to Kinshasa. If the road Goma - Masisi - Walikale is improved coinciding with the opening of the Walikale - Lubutu road segment, the Goma area may also greatly expand production of staples which would be shipped to the Kinshasa market by road and river transport.

5.14 In Bumba, the production of rice paddy has remained stationary during the last few years. In order to expand production on new land and to stimulate yields, a program of improvement of access roads and expansion of seed production of improved varieties appears necessary.

5.15 In light of the transport constraints in all areas visited during the field trip of March 10-25, what areas appear to be the most promising for project identification within the framework of U.S.A.I.D development priorities?

A number of projects could qualify and be designed to promote the marketing access of small farmers with corresponding increases in cash crops and the volume of production sold to the growing city markets. Rather than concentrating AID assistance on one project in one area, it seems that spreading AID resources to meet critical constraints in several areas may result in a greater total development impact. A multiplier effect would further increase the development impact if AID assistance is complementary to projects by other donors.

5.16 Under such a program of meeting critical needs in several areas, AID might consider the following:

- Continuation of road and bridge improvement in North Shaba, but at a lower average cost per km since the equipment currently in place has an economic life of several more years.
- Strengthening the seed program of PNR in Bumba by replacing some of the obsolete Chinese equipment. Improving important rice access roads by furnishing one mechanical road unit to work on priority access roads.
- Improving the Masisi - Sake road in Kivu to stimulate agricultural production, coupled with establishment of a cooperative for making suitable crates for vegetables ~~to be air~~ freighted to Kinshasa (Kivu - Phase I).
- Improving the Masisi - Walikale road to complement the planned reconstruction of the Walikale - Lubutu road segment of the Bukavu - Kisangani road (Kivu - Phase II).
- Improving agricultural access roads in Kivu to complement reconstruction of roads by Canadian and German bilateral assistance.
- Improving access roads in areas where World Bank road projects ensure rehabilitation of main roads.

5.17. The problems and constraints of SNCZ affect marketing of corn and other agricultural products as well as the export of copper. It is not recommended, however, that AID get involved in a railway project, since the World Bank will follow up with a redesigned railway project to continue the objectives of the 1979 project. Yet AID might investigate the possibility of an Export-Import Bank Credit to finance spare parts for General Electric locomotives on a stop-gap basis in coordination with the efforts of the World Bank to improve the availability of spare parts.

5.18 Private operators are providing efficient river transport services on the Zaire River. If warranted by transport demand, it seems that private shipping companies could also provide services on Lake Kivu. Improvement of SNCZ lake service does not therefore appear to be of priority interest to AID to promote marketing of small farmers.

5.19 With regard to air transport, private operators are expanding service according to demand when airport facilities are adequate. Improvement of runways and provision of navigational aids for smaller airports may well be investigated by AID as part of future projects to improve marketing of agricultural products of higher value.

ANNEX 2

MAIZE PRODUCTION AND MARKETING IN NORTH SHABA

I. Production, Marketing and Exports of Maize in North Shaba

A. Maize Production

Area planted to maize and total maize production have increased markedly during the North Shaba Development Project. While approximately 23,700 hectares were put under maize cultivation in 1978-79, producers cultivated roughly 33,600 hectares of maize or 42% more land area in 1981-82 (see Table S-1). By 1981-82 81% of the land under maize cultivation in the project zone was in forested areas, while only 19% was in savannah areas.

Most of the expansion in cultivated area during the project has taken place in forested areas, where maize yields are reported to be 54% higher. Soils in forest galleries are more fertile and less hard to till than savannah soils. Weed growth is also less prevalent in newly cleared soils in forest zones, which leads to labor savings.

Estimated maize production in the PNS area expanded from some 47,500 metric tons in 1978-79 to about 75,600 metric tons in 1981-82, an increase of nearly 60%. Nearly 65,600 metric tons or 87% of the total were produced in the forest zone in 1981-82. Average yields rose from roughly 2.0 to 2.3 metric tons over this same period. In 1981-82 maize yields were highest (2.9 metric tons per hectare) for improved varieties cultivated using improved practices in forest zones. The lowest yields (1.1 metric tons per hectare) were recorded in savannah zones, where local maize varieties and unimproved cultivation practices were used. Cultivation of improved varieties, principally Kasai I, has had a significantly greater effect on yields than improved agricultural practices.

Area under maize cultivation, total maize production and average yields increased by roughly the same proportion in the Kongolo and Nyunzu subregions during the period 1978-79 to 1981-82, as shown in Table S-2. Area planted and total maize production were roughly 30% and 25-27% higher (respectively) in Kongolo than in Nyunzu. Maize is a staple crop in Kongolo while principally a cash crop in Nyunzu.

TABLE 8-1

Maize Production and Marketing in the North Shaba
Project Area, 1978-79 through 1981-82

	Area Cultivated		Estimated Production		Commercialized Pro-		Proportion of Production Sold (%)	Estimated Average Yield Metric Tons/Ha.
	'000 Ha.	Index	In PMS Area Metric Tons	Index	duction in PMS Area Metric Tons	Index ^a		
1978-79	23.7	100	47,500	100	12,353	100	26	2.0
1979-80	24.4	103	51,200	108	18,199	147	36	2.1
1980-81	30.1	127	65,965	139	32,383	262	49	2.1
1981-82	33.6	142	75,585	159	30,836	250	41	2.3

Source: Projet Nord Shaba, Service de Collecte et Analyse des Données (SCAD), "Resultats Deja Obtenus," Mimeo, July 1982

Project Paper, North Shaba Rural Development, 660-0059, February 1983

^a Commercialized production refers to the maize shipped from North Shaba to other regions.

TABLE 2-2

Maize Production and Marketing in the Kongolo and Nyunzu Subregions, 1978-79 through 1981-82

Area Cultivated '000		Total Prod- '000		Average Yield	Seeds and Losses (15%)	Quantity ^a Marketed		Proportion of Production	Quantity Available for Consumption		
No.	Index	M.Tons	Index	(M.T./Ha.)	'000 M. Tons	'000	Index	Sold (%)	'000 M.T. Index		
KONGOLO											
1978-79	13.3	100	26.6	100	2.0	4.0	1.9	100	7	20.7	100
1979-80	13.7	103	28.7	108	2.1	4.2	3.7	195	23	20.7	100
1980-81	16.5	124	34.7	130	2.1	5.2	5.0	311	17	23.6	114
1981-82	19.2	144	42.1	158	2.2	6.3	7.0	368	17	28.8	129
NYUNZU											
1978-79	10.4	100	20.9	100	2.0	3.1	10.4	100	30	7.4	100
1979-80	10.7	103	22.5	108	2.1	3.4	14.5	139	64	4.7	62
1980-81	13.6	131	23.8	114	2.2	3.5	21.5	207	90	-1.2	0
1981-82	14.4	138	33.5	160	2.3	5.0	23.8	229	71	4.7	62

Sources: Adapted from Project Paper, North Shaba Rural Development, #60-0059, February 1983 and PMS Data on Commercialization.

^a Quantity marketed refers to maize shipped from North Shaba to other regions.

B. Increases in Maize Marketing.

As shown in Table S-2, marketed output of maize increased by 150% from 1978-79 to 1981-82 in the North Shaba project area. The commercialized proportion of output rose from 26% in 1978-79 to over 40% in 1980-81 and 1981-82. The reasons for the increase in maize marketings are several and the impact of the different influences is difficult to separate out. In recent years about 120,000 metric tons of maize were imported from Zimbabwe and South Africa annually. These imports were greatly curtailed in 1982 (67,600 tons) by the shortage of foreign exchange. The high cost in foreign exchange of importing maize has encouraged the principal millers in Lumbumbashi to seek alternative suppliers. The search for new markets has taken place at the same time that Project North Shaba has improved the road network in the Kongolo and Nyunzu areas and provided new maize varieties to large numbers of cultivators. Whether demand from South Shaba elicited a dramatic supply response in North Shaba or the expansion in maize supply made possible by the project attracted buyers from Lumbumbashi is problematic. Both factors are probably at work.

Buying counters (comptoirs d'achat) have opened in Nyunzu and Kongolo during the past two years. These counters are either operated by representatives of the major millers in Lumbumbashi (MINOKA, Tarica Freres, Amato Freres) or locally based traders who sign supply contracts with these millers. It is estimated that at least 80% of the maize marketed in North Shaba is shipped by rail to South Shaba.

While the commercialized proportion of maize production has risen during the past four years in North Shaba, the supply and demand situation is fundamentally different in the two zones of the project. As shown in Table S-2, no more than 17% of the maize produced in the Kongolo zone was shipped to other regions from 1978-79 through 1981-82. In contrast, at least 64% of the maize produced in Nyunzu zone during the period 1980-1982 was shipped to other areas. According to PNS figures, this proportion reached 90% in 1981. At the same time estimated consumption of maize dropped from 7400 to 4700 metric tons between 1979 and 1982 in the Nyunzu zone, or from 35% to 14% of estimated production. Estimated consumption as a proportion of estimated production also dropped in Kongolo zone during this period (78% to 68%), but estimated consumption increased 39% from 20,700 tons in 1979 to 28,800 tons in 1982. In sum, Kongolo zone absorbs at least two-thirds of its annual maize output and ships no more than one-sixth to other regions, but Nyunzu zone consumes well under one-third of its output and ships at least two-thirds to other regions. Maize is the staple crop for the Kongolo zone, while it is grown principally as a cash crop in Nyunzu, where manioc is the staple.

The greater commercial orientation of Nyunzu zone is reflected in the fact that there are eight maize buying counters in Nyunzu while only two in Kongolo. During the 1982 campaign there were 52 buyers of maize in Nyunzu zone, of which 13 were large volume buyers, while there were 15 buyers in Kongolo zone, of which only three were large volume buyers. Moreover, 71 vehicles were operated during the 1982 maize buying campaign in Nyunzu, as compared to 29 vehicles in Kongolo. Most of the vehicles operating in Nyunzu

C. Maize Marketing Channels and Flows

Most of the marketed maize in North Shaba is assembled by well-financed traders who own fleets of seven to ten ton trucks. These merchants distribute sacks to farmers in accessible production zones during the month before the opening of the maize marketing campaign, which begins in April and ends in July-August. Buying agents for the traders then return to assemble the filled sacks at the farmgate. The producers remove the maize kernels from the cobs and fill the sacks. There is little doubt that the improvement in the secondary and feeder road network in the project area has enabled assemblers to reach areas which were inaccessible several years ago. This has induced producers to put large tracts of previously uncultivated or abandoned land under maize cultivation.

Although producers are not obligated to sell their produce to the traders who provide them with sacks, there appears to be a high proportion of sales to the same sack-distributing merchants. If rural producers have few alternatives to selling their maize to the large-scale trader who furnishes them with sacks, then they may be at a comparative disadvantage in the marketing process. There is no shortage of allegations that would seem to support this inference. Producers, small-scale traders and missionaries report that it is common for large traders and their buying agents not to weigh maize assembled at the farmgate. Instead, they insist that the cultivators fill the bags with 120-130 kilograms of grain, while only paying for 100 kilograms, the usual weight of such a sack. Traders justify this practice by contending that producers fill the sacks with foreign matter. Others claim that producers in the more isolated zones need to provide gifts to transporters and buying agents in order to get them to assemble in those areas.

The SFMA team did not have an opportunity to observe maize assembly first-hand in the project area, so the extent to which the above allegations are true could not be ascertained. It would seem appropriate, however, to monitor transactions at the farmgate, particularly in more distant production zones, as well as at the buying counters. PNS extension agents, who are less occupied during the harvest and post-harvest period, could periodically visit villages during the buying campaign. In this way the ability of the large traders to capture monopsony rents could be judged. If necessary, remedial measures, such as widespread and frequent monitoring of transactions or increasing the number of trucks available for rent to small traders and farmer groups, could be undertaken. To date, the North Shaba Project has not taken much interest in monitoring the conduct of the maize trade. The returns to such an effort, particularly in assuring that producers' incomes are maximized, might be quite high.

Although a far greater proportion of marketed maize is assembled at the farmgate than in the towns, the opening of buying counters at Nyunzu and Kongolo during the past two marketing seasons has moved many transactions from the farmgate to the railhead. These counters are handling an increasing proportion of maize sales, as farmers in production zones surrounding the towns bring their maize to market on bicycles, by renting space on pickups and trucks, and by renting out vehicles in cooperation with other cultivators.

distance transport of relatively small lots to the markets in South Shaba.

Most of the maize purchased at the farmgate by buying agents for the large traders is trucked to the railheads at Kongolo and Nyunzu when rail transport is available. The maize is stored at the railheads or buying counters prior to rail shipment. The shortage of locomotives and railcars for shipping the maize has created delays in expediting the maize to South Shaba during the previous campaigns, although all of the maize has eventually been evacuated. Maize shipped by rail to South Shaba from Nyunzu is expedited as unprocessed grain, while some of the maize is milled at Kongolo prior to shipment. Maize flour is also sold to consumers in Kongolo, but not in Nyunzu, which is a far smaller town whose population rises during the maize buying campaign and falls during the growing season.

While the vast majority of the marketed maize is transported by rail to South Shaba, there is some trucking of maize to Kalemie and the Kasais. Relatively small quantities of maize are trucked from the Nyunzu area to Kalemie, and there is some assembly of maize by truckers from Kasai Oriental in the western reaches of North Shaba. This region bordering Kasai Oriental (on the left bank) is outside of the PNS zone of intervention, however, and the quantities shipped are minimal, despite the large maize price differential between the two regions. This is due to the poor condition of the roads linking North Shaba and the demand centers of Mbuji-Mayi and Kananga, and the consequent high cost of transport. There are also some allegations of illegal rail transshipment of maize to the Kasais, particularly from Nyunzu, but these are also probably minimal, given the distances involved, likely losses in the course of transshipment, and the enforcement of the ban on shipments of maize from Shaba Region. This restriction on exports also prevents rail shipment of maize to Kindu, which is linked to Kongolo by rail.

Losses of maize stored at the buying counters and at the railheads are reported to be low. The principal buyer in Kongolo has two warehouses with 4,000 metric tons of storage capacity. There is a warehouse at the Kongolo rail station capable of holding 10,000 cubic meters of produce. Large quantities of maize are trucked to the railhead in Nyunzu and stored in the open awaiting shipment. Since the marketing campaign takes place during the dry season, losses are minimal. Rail transport between North Shaba and Lumbumbashi takes three to seven days, and losses in the course of transport are reportedly low.

D. Trends in Maize Prices

Although maize prices at the farmgate and buying counters in Kongolo and Nyunzu have risen steadily in nominal terms during the past few years, real prices have at best remained constant. As shown in Table S-3, the farmgate price of maize, adjusted for the change in the parallel exchange rate, was below the 1978 price in two subsequent years (1979 and 1981) and above the 1978 price in two other years (1980 and 1982). At the same time traders, producers and government officials report that the prices of consumer goods, such as salt, kerosene, sugar, cloth, bicycles, and roofing material, have risen faster than the price of maize. Although time-series data on the prices of different commodities sold in North Shaba are not available, it appears as if the terms of trade have moved against agricultural producers. That is, it probably takes more maize to purchase a bicycle (or any other consumer good)

TABLE S-3

Maize Prices in the North Shaba Project Area,
1979-1982
(Zaires/Metric Ton)

	Farmgate Price	Adjusted ^a Farmgate Price	Price ^b at Rail- Head	Adjusted ^a Railhead Price	Parallel Rate ^c Zaires/ 100 SDRs	Index
1978	220	220	-	-	384.3	100
1979	350	159	-	-	845.2	220
1980	450	241	600	322	717.0	137
1981	600	192	900	288	1202.7	313
1982	1000-1200	214-256	1500	320	1800	468

Sources: Project Paper, North Shaba Rural Development, 660-0059,
February 1983

Interview with Cit. Mpunga, Chef du Sous-Secteur de
Commercialisation de PNS

^a The prices are adjusted for changes in the parallel exchange rate between Zaire and the SDR relative to the parallel rate in the base year (1978).

^b The railhead price refers to the purchase price of maize at the buying counters (comptoirs d'achat) in the towns of Kongolo and Nyunzu, which are located at railheads.

^c The data for the parallel rates were obtained from World Bank sources. The figure for 1982 is a preliminary estimate.

campaign only to buy it back at considerably higher prices during the following growing season. These producers use the revenues from maize sales to buy consumer goods, pay annual head taxes on adults, and pay for school fees and materials. If maize producers are producing and selling more maize in response to declining terms of trade, then the rapid expansion in maize production and sales may reflect the deterioration of growers' economic position rather than increases in real income and improved overall rural welfare.

From Table S-3, it is also apparent that the price of maize at the buying counter is about 50% higher than the farmgate price. This gross margin is comprised mainly of transport and vehicle amortization costs, buying agents' commissions, and a net assembly margin. The marked difference in the two prices has induced many producers, who cultivate within 30-40 kilometers of Kongolo and Nyunzu, to capture this assembly margin themselves by transporting sacks of maize on the backs of bicycles, in rented vehicles, or on trucks owned by traders.

Maize pricing policy has played an important role in the determination of farmgate and flour prices in the past. Minimum prices are set prior to each buying campaign by a commission composed of the governor of Shaba Province and representatives of the principal millers, traders and Department of Agriculture. The Director of PNS, ANEZA, subregional representatives of the Department of Agriculture, and the principal millers of South Shaba have provided input into this decision-making process in past years, and representatives of PNS and the DOA in North Shaba were participating in the pricing dialogue in Lumbumbashi in April 1983. PNS officials were hoping for a minimum farmgate price of 1.8 Zaires per kilogram but were expecting a price of around 1.5 Zaires. Cost of production data is prepared by the PNS staff for the annual meeting in support of higher farmgate prices. In the future it would be useful to collect, analyze and present monthly price statistics for maize, other agricultural commodities, consumer goods, fuel and selected capital goods. In this way the terms of trade between agricultural commodities and consumer goods could be analyzed and possibly used as additional evidence in support of higher farmgate prices. By developing and comparing indices of agricultural and non-agricultural commodities, PNS could argue more effectively in producers' behalf. At present, it appears as if the large millers in Lumbumbashi exercise disproportionate influence in the price setting process. Following the abandonment of administered agricultural prices, these millers are required to file annual estimates of operating costs in order to justify their wholesale prices for maize flour.

In May 1982 the GOZ liberalized the prices of most agricultural commodities. Prior to this commodity prices were administered and adjusted each year for changes in estimated costs of production. The minimum farmgate prices set by regional authorities were construed by merchants as ceiling prices during the course of earlier buying campaigns. The prices typically rise at least 25% after the campaign, reflecting scarcities and storage costs. Yet during the buying campaigns before 1982 the forces of supply and demand were not allowed to operate freely. 1982 proved to be a transition year, since prices were liberalized in late May after two months of maize buying and many producers were not informed of the change in pricing policy. This year (1983) it will be important to follow the evolution of farmgate prices in various zones in the project area during the maize buying campaign. By carefully monitoring prices PNS could ascertain whether maize marketing is conducted competitively or whether the large traders are using the suggested minimum price to their advantage by continuing to tell producers that it is a ceiling price. As pointed out above, the maize marketing process is not fully understood and merits further examination.

II. Production and Marketing of Other Foodcrops

According to PNS statistics, the quantities of palm oil, rice, peanuts and manioc (Table S-4) shipped from North Shaba are far lower than the commercialized volume of maize in the project area. As with maize, marketings of these other food crops have risen during the course of the project, although rail shipments of the above crops dropped from 3211 metric tons in 1980-81 to 2932 tons in 1981-82. Production and sales of palm oil, rice and peanuts are far higher in the Kongolo zone than in Nyunzu, reflecting the greater diversity of agriculture around Kongolo. Greater quantities of manioc are cultivated and marketed in the Nyunzu zone, where manioc is the staple crop.

Sales of food crops other than maize provide cash income for producers during periods of the year other than the maize buying campaign. These other crops are harvested at different times of the year than maize or have different storage characteristics. The large merchants use their trucks to assemble these other commodities during periods other than the maize marketing season, when all available vehicles are fully occupied. The commodities are sold in the principal towns of the region (Kongolo, Kalemie) and also transported by rail to South Shaba (palm oil, peanuts, rice) and Kindu (palm oil and rice).

TABLE B-4

Marketed Quantities of Foodcrops Other than Maize in the North
Shaba Project Area by Subregion, 1978-79 through 1981-82
(in Metric Tons)

	Pean Oil			Rice			Peanuts			Manioc		
	Kongolo	Nyunzu	Total	Kongolo	Nyunzu	Total	Kongolo	Nyunzu	Total	Kongolo	Nyunzu	Total
1978-79	1153	308	1462	332	27	359	203	171	374	7	36	44
1979-80	1466	104	1570	633	12	655	161	314	474	7	81	88
1980-81	1673	65	1738	370	1	371	487	230	717	17	168	185
1981-82	1769	102	1871	257	20	278	294	235	529	106	149	255

Sources: Project Paper, North Shaba Rural Development, 640-0059, February 1983
Projet Nord Shaba; SCAD, "Resultats Deja Obtenus"; PMS Sous-Secteur
d'Assistance a la Commercialisation, "Rapport Annuel, 1982".

Note: Some of the totals are not equal to the sum of the parts due to rounding errors.

III. Constraints to Increasing Production and Marketing of Food Crops in North Shaba

A. Small Farmer Access

1. Lack of Viable and Functioning Cooperative Institutions

The agricultural producers in the North Shaba subregion have a history of non-cooperation and interfamily rivalries. Conflicts over the use of land are quite common and may have accelerated during the course of the project, as producers have endeavored to put more land under commercial maize production. According to some reports, certain wealthy families have obtained the rights to use large tracts of land through seizure and paying off of customary chiefs. The effect of the PNS interventions on access to land needs further study.

While the PNS extension service has a generally good rapport with cultivators in North Shaba, there are no active and functioning producer groups that could coordinate the procurement and distribution of seeds, agricultural implements and consumer goods, or the assembly and marketing of maize and other food crops. Project North Shaba has formed a credit union that pays 5% quarterly interest on savings. Most of the 150,000 Zaires worth of deposits are held by project staff, but some 15% of the savings have been deposited by farmers in the project zone. The savings are not pooled for investment, input procurement or product marketing, however. Although agricultural producers in North Shaba are not known for cooperation in the past, efforts to organize farmers on a broad scale might have a high payoff. The experience of the Catholic missionaries at Sola is instructive, even though the missionaries themselves manage cooperative efforts in agricultural marketing. Given the legacy of individualism and competition for land, cooperative activities may be difficult to initiate without outside organization and management.

2. Continuing Access to Improved Maize Seeds.

Project North Shaba has very successfully fostered the adoption of improved varieties of maize, particularly Kasai I, which was developed by the Programme National Mais and is now planted on 80% of the land under maize cultivation. Yet the project has subsidized the adoption of the new varieties at quite high cost. Maize seed acquired at a cost of 5.5 Zaires per kilogram in 1981 (C & F Kongolo) was sold to producers at 1.5 Zaires per kilogram in 1982. Producers probably paid well under 25% of the real delivered cost of the seed, if administrative storage and interest costs are taken into account. Although this degree of subsidization may be justifiable in the short run in order to encourage rapid and widespread adoption, it is clearly not sustainable in the long run.

The experiment station at Mbula is currently the only institution in North Shaba that is producing improved seeds for distribution to farmers. There are no commercial seed production and distribution enterprises in North Shaba, and the steady rise in maize prices offers little incentive for holding

large a quantity of the maize produced as possible in order to maintain consumption levels. While subsidizing production of improved seeds by the Mbula experiment station can perhaps be justified from a social benefit-cost standpoint, some thought needs to be given to how private sector seed production could be promoted.

3. Improved Access to Markets

By rehabilitating some 600 kilometers of secondary and feeder roads in North Shaba, PNS has greatly improved the access of maize assemblers to production zones. Seven to twelve ton trucks are now able to reach areas which had become isolated enclaves before the project. There is little doubt that greater ease of access is largely responsible for the dramatic increase in commercialized output. While agricultural producers benefit from this improved access in that they are now able to sell produce to town-based assemblers, their ability to deliver surplus maize to buying counters in the towns is constrained by lack of access to vehicles. This problem stems in large part from the poor organization of rural producers in North Shaba, but it also is due to limited credit for renting or purchasing vehicles. (See transport annex for further discussion.) PNS rental of trucks to small traders and producer groups provides a useful service to limited numbers of renters. Small farmers will need to organize themselves, however, into viable groups that are capable of pooling resources or obtaining loans from commercial banks in order to counter the alleged abuses of large assemblers. Presently, there are no commercial bank branches in either Kongolo or Nyunzu. Even if there were, groups of producers would not be able to obtain credit without collateral in the form of structures in urban areas. In general, credit is only available to wealthy merchants who own homes, stores and warehouses in the towns. This is true not only of North Shaba but for all of Zaire.

4. Large Trader/Transporter Market Power

Upgrading of the rural road network has improved assemblers' access to maize production centers, but there is evidence that maize assembly is relatively highly concentrated in North Shaba. The larger traders and buying agents for millers in Lumbumbashi are the only marketing agents with unrestricted access to trucks, sacks and sufficient working capital to finance buying campaigns. Small traders and producers have access only to PNS trucks which are not available to everyone, or the vehicles of large traders, for which rental rates are high. By controlling transport and access to most of the rented vehicles, large traders exercise considerable market power.

Many informants allege that this market power is used unethically to the detriment of rural producers. Producers are asked to fill the sacks to the point of overflowing, such that the traders acquire 110-120 kilograms of maize for the price of 100 kilograms, which is the supposed standard weight per sack. Some producers also claim that the reported weights of sacks of maize taken directly to buying counters in Kongolo and Nyunzu are less than the actual weights. It is also alleged that gifts of goats and cash are

traders' and producers' access to credit and vehicles. By fostering greater competition in maize assembly, unethical practices would become less prevalent. In addition, periodic monitoring of transactions at the farmgate and buying counters by PNS extension agents would deter some unfair practices.

B. Small Trader Marketing Access

1. The Weakness of ANEZA

The ANEZA office in Kongolo has about thirty members, many of whom are reportedly school teachers and civil servants. The association does not offer its members any services in the form of credit, access to vehicles, fuel, sacks or storage. The members do not pool their funds for cooperative procurement or use of vehicles. During certain years ANEZA has had some voice in determining the minimum farmgate price of maize in Shaba Region, however.

2. Lack of Access to Credit

Small traders are not able to offer collateral as guarantees for loans from commercial banks or SOFIDE. Hence, they are unable to acquire vehicles, storage facilities and additional working capital for maize purchasing.

3. Limited Access to Transport

Small traders complain about the high rental rates for vehicles owned and operated by the large traders, and the need to bribe SNCZ officials to obtain space on railcars.

4. The Absence of Contractual Arrangements with Buyers in Lumbumbashi

Most of the small-scale traders supply maize to millers based in Lumbumbashi. While some of this maize is sold to buying agents for the millers in Kongolo and Nyunzu, much of it is shipped in small lots by rail to Lumbumbashi. The small traders are obliged to follow their shipments to Lumbumbashi, where they sell the maize to the millers on an ad hoc basis. This practice limits the amount of time traders have for maize buying and hence the quantity of maize purchased and shipped. As an alternative, small traders are able to sell maize to the large volume buyers at buying counters in Nyunzu and Kongolo.

5. The Lack of Access to Milling Equipment

While some of the small traders own and operate small-scale mills in Kongolo, most of them do not. As a result, they have to pay the larger traders in Kongolo to mill the maize or they must ship the unprocessed maize directly to Lumbumbashi. Since the returns to milling are high (net margins are at least 20%), the small traders forego considerable profits.

C. Constraints Facing Large Traders (Operateurs Economiques)

1. Limited Access to Formal Credit

Large traders' access to bank loans is far less limited than that of small traders and producer associations. Nevertheless, the largest trader Kongolo complained that he was only able to obtain about 40% of the funds requested for financing the 1983 maize buying campaign.

2. Difficulties in Marketing Consumer Goods in Rural Areas

The trucks of the large trader-transporters typically run empty in rural areas, which raises the cost of assembling maize. The largest trader Kongolo reported that hauling consumer goods to production zones provided buying agents with opportunities to cheat him (by remitting only part of the revenues from sales). However, he generally prefers to sell consumer goods at a well-stocked store in Kongolo, where he has better control over inventory prices. Yet he occasionally ships bicycles and corrugated tin roofs to rural areas when producers place individual orders.

Another key reason why few of the large traders sell consumer goods in rural areas is that ESTAGRICO operates a system of rural stores at 14 permanent locations and 30 buying points during the cotton campaign. ESTAGRICO sells salt, soap, petrol when it is available, sugar, cloth and agricultural tools at cost plus 2-3% to any and all producers in North Shaba (since cotton cultivation is mandatory). The large traders are unable to compete, because their margins are far higher. It is important to note, however, that ESTAGRICO buys principally on the left bank of the Zaire River, while most maize is grown on the right bank. So in many areas on the right bank producers have few alternative sources of supply of consumer goods other than large traders.

ANNEX 3

Agricultural Production and Marketing in South and North Kivu

I. Summary and Policy Conclusions

Population increase, soil erosion, declining relative food crop prices, and the cross-border trade have worsened the food supply and nutrition situation in the area around Bukavu in recent years. Yet North Kivu Region probably has the greatest potential for agricultural production of any region in Zaire. Straddling the equator (1 degree N. to 2 degrees S.) and ranging in altitude from 800 to 4000 meters, the region is cool, mountainous and endowed with fertile soils. Rainfall is abundant (1300-2000 millimeters per annum). A broad range of crops are cultivated including coffee, tea, quinine, papaine, manioc, maize, beans, peanuts, bananas, potatoes, vegetables, soya and palm oil. While the lower value foodcrops are consumed in Kivu, air freighting of coffee, tea, beef, potatoes, fresh vegetables and beans from Goma to Kinshasa has expanded greatly since 1977, when private airlines were allowed to compete with Air Zaire in transporting goods and passengers.

The region is also noted for its livestock production, particularly on the high plateau to the north and west of Goma. Although North Kivu represents only 2.6% of the land mass of Zaire, its 245,000 head of cattle comprise 22% of the national cattle herd. Chilled beef has become an important export from the region (1814 metric tons in 1981) and some 8800 head were trekked from North Kivu to Bukavu and South Kivu in 1981. The FAO (1975-1982) and CIDA (1983-1988) have promoted the development of a cattle producers' association (AGOCENKI, Association Cooperative des Groupements d'Eleveurs du Nord Kivu) and the adoption of improved husbandry practices, such as cross-breeding, regular vaccinations and deworming, and the sowing of Kikuyu grass and clover in association. The Canadian project, when finally approved by the GOZ, will also fund the construction of a modern abattoir at Goma. Large numbers of goats, pigs, rabbits, ducks and fowl are also raised, but these are slaughtered only for local consumption. In addition, the large fresh water lakes along the eastern border of Zaire (Tanganyika Idi Amin, Kivu) provide an underexploited potential for fish production, although the presence of large quantities of methane gas in Lake Kivu is a constraining factor. A fish cooperative (COPEVI, Cooperative des Pecheurs de Vitshumbi) was formed in 1949 at the southern end of Lake Idi Amin, but production has declined markedly since the mid-1970s, due principally to the increasing scarcity and high cost of outboard motors, spare parts, fuel, fishing nets, and cold storage units. The cooperative has applied to SOPIDE for a four million Zaire loan which would be used to acquire four modern fishing boats along with spare parts and fishing nets, but the loan has not yet been approved. Demand for fresh, dried and salted fish remains strong, however, in the urban centers of Kivu, as evidenced by trucking of fish from Vitshumbi (to Goma) and Uvira (to Bukavu).

including national roads maintained by the OR, secondary roads maintained by local authorities, and feeder roads which are poorly maintained if at all. Nearly every individual interviewed, including government officials, private trading companies (opérateurs économiques), small traders and expatriate advisors, argued that rehabilitation and regular maintenance of the existing road network and the construction of new feeder roads would lead to increased agricultural output. Readier access to trucks, spare parts and fuel is also required to facilitate this expansion. Moreover, the completion of the Kisangani-Lubutu-Walikale-Bukavu road, whose construction is being financed by the FED, and the linking of Goma to this road would allow increased agricultural output, particularly lower value per unit produce, to be evacuated from the region.

A candidate road for USAID financing is the road from Sake to Masisi and Walikale. This road would stimulate agricultural production in the fertile Masisi area and constitute the shortest route between Goma and Kisangani once the reconstruction of the Lubutu-Walikale segment is completed by the European Community. The linking of Goma and the areas to the north of Goma with Kisangani would enable traders to transport lower value (per unit), less perishable agricultural produce, such as beans, maize, bananas, sorghum, manioc, peanuts, sweet potatoes and rice, to Kinshasa via road and river.

Although the upgrading of the Kisangani-Bukavu road has been designated as a high priority by the GOZ, funding has only been approved by the FED for a 35 kilometer segment between Lubutu and Walikale. Nor does it appear that additional funding will be forthcoming in the near future. FED officials estimate the total cost of construction of the Lubutu-Bukavu section and rehabilitation of the badly deteriorated Kisangani-Pene-Tungu section at \$200 million. Given the critical importance of this trunk road for evacuation of lower value agricultural produce and its unknown completion date, any USAID interventions in Kivu are premature at this time. Moreover, CIDA is planning to fund an agricultural development project in North Kivu beginning in 1984, which will follow CECOPHANE the Canadian supported vegetable production and marketing intervention.

II. Food Crop Production and Marketing in Kivu Region

A. Food Crop Production in South and North Kivu Subregions

1. The Bukavu Food Shed

The region around Bukavu is densely populated and heavily cultivated. The soils are very fertile, yet prone to erosion, particularly on cultivated hillsides, which are not always terraced. The population of Bukavu was estimated to be nearly 150,000 in 1981 but may well be over 200,000 in 1983.¹ The area within a fifty kilometer radius of Bukavu probably contains

some 500,000-600,000 people and is one of the more intensively cultivated regions in Africa. A wide variety of food crops are produced, including maize, manioc, bananas, beans, sweet potatoes, sorghum, potatoes and soya. Beans and maize are transported to Bukavu from Goma via barges (operated by SNCZ on Lake Kivu) and by truck.² Most foodstuffs are assembled by small-scale traders within a 50-60 kilometer radius of Bukavu. The poor condition of the secondary and feeder roads makes the cost of assembling produce over a wider region prohibitive. Bukavu's supply of animal protein is obtained by slaughtering goats and pigs raised in South Kivu, by trucking in fish from Lake Tanganyika (via Uvira), and by trekking in cattle purchased in Masisi (North Kivu), particularly at the Mushaki market.³

According to many observers, the food supply situation for the city of Bukavu and its environs has worsened in the past few years. The incidence of marasmus and kwashiorkor is high among young children. This deterioration in nutrition is due to several factors. First, the urban population is expanding rapidly, so there are many more people to feed. Second, there is some evidence that overall food crop production has declined in recent years. This can be attributed in part to the boom in gold prospecting and trading around Bukavu in the past few years, which has probably led to a reduction in the agriculture labor force. Moreover, returns to cultivating food crops are low and prices of basic foodstuffs have not risen nearly as rapidly as the prices of cash crops, beef and consumer goods.

The decline in the agricultural terms of trade (the prices of food crops relative to the prices of the consumer goods that farmers buy) has undermined incentives to produce food crops for commercial sale, even though the prices of foodstuffs rose 55% in nominal terms from October 1982 through February 1983 (see Table K-1). The recent and rapid deterioration in the value of the Zaire on the parallel market is responsible in large part for this trend. The proximity of Rwanda and Burundi have also encouraged greater numbers of people in the Bukavu area to become involved in illicit trade in commodities such as coffee, fish, fuel, vehicles, and consumer goods. While not everyone has the means to enter smuggling in a major way, the cross-border trade appears to be on the upswing.

The poor condition of the Bukavu-Goma road is a major constraint to shipments of food crops from North Kivu, which is an agricultural surplus region.⁴ As discussed above, the inadequacy and limitation of the secondary and feeder road network around Bukavu is another serious constraining factor to improving the food supply situation in Bukavu. Finally, transport of

² During the first eleven months of 1982, recorded shipments of beans and maize by SNCZ barges from Goma to Bukavu were 1637 and 1652 metric tons respectively. No statistics on truck transport are available.

³ P. G. Chagnaud (1982) estimates that 8800 head of cattle were trekked from North to South Kivu during 1981. About 70% of these animals were slaughtered in Bukavu.

TABLE K-1
Retail Food Prices, January 1982-February 1983
(In Zaires)

	Units	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Cigarettes	Kg	-	1.94	1.44	1.92	1.80	1.61	1.11	1.48	2.41	1.96	-	-	3.81
	Kg	9.64	8.99	7.94	8.56	8.23	8.43	7.12	8.13	8.56	9.05	10.26	16.74	12.94
Tea	Kg	2.73	1.87	2.18	2.76	2.95	3.32	2.77	3.06	3.23	2.94	5.95	10.70	3.81
	Kg	2.19	3.06	3.03	3.52	2.83	3.00	3.23	4.91	4.59	4.61	4.37	3.74	4.34
	Kg	16.29	20.13	14.28	16.17	20.80	20.26	25.46	22.47	23.76	25.71	34.14	37.50	40.80
Fish	Kg	21.43	26.47	20.45	24.19	26.38	30.19	40.95	27.99	33.04	33.07	30.94	44.52	48.72
Peanuts	Kg	12.63	11.25	10.36	14.64	15.19	10.81	11.99	10.71	12.44	19.57	19.41	18.50	20.30
Onions	Kg	1.84	1.93	2.03	2.80	3.69	2.20	2.08	2.08	3.52	2.63	2.95	1.77	3.39
	Kg	2.30	2.15	2.82	3.62	3.88	4.34	3.88	3.01	3.78	2.16	12.50	3.78	5.88
	Bottle 72cl.	7.00	6.92	7.10	10.00	10.00	9.87	10.00	9.50	9.12	12.33	12.25	17.00	16.50
	Small Bag 700 gr.	3.00	3.00	3.00	3.50	4.00	4.50	5.00	5.00	6.00	5.00	5.00	10.00	10.00

Food Price Index for Bukavu (1976=100)

Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
1800.7	1201.3	1428.0	1241.9	1400.8	1400.8	1408.4	1540.0	1471.1	1562.9	1715.2	2236.1	2333.4	2399.7

Source: Institut National de la Statistique (I.N.S.), Direction Regionale du Kivu

foodstuffs by barges operated by SNCZ is unreliable and avoided by most traders, who cite irregularity of service and theft as problems.

2. Food Crop Production in North Kivu

North Kivu has been touted as the "grenier du Zaire" and for good reason, although some claim that agricultural production has declined in the past decade. The zones to the north and west of Goma are blessed with fertile soils and abundant rainfall, and the climate is cool and conducive to intensive agricultural labor and livestock production. North Kivu has been a surplus producer of foodstuffs for many years, exporting large quantities of beans, vegetables, potatoes and beef to South Kivu, Rwanda and Kinshasa. In addition, large quantities of peanuts, manioc, bananas, sorghum, maize and sweet potatoes are cultivated, as shown in Table K-2. The commercialized proportion of these crops is typically less than 15%, however.

According to GOZ statistics, production of food crops in North Kivu remained roughly constant during the 1979-1981 period. Production estimates for 1982 are not yet available. While production of beans, manioc, bananas and robusta increased, production of potatoes, maize, sorghum, paddy and sweet potatoes declined (see Table K-2). Some of the estimates of the commercialized proportion of production and the magnitude of changes in area cultivated, total production and yields over the period 1979-1981 are implausible. In some instances the figures appear to be fabricated or extrapolated linearly from earlier production estimates. As is also shown by the crop production and commercialization estimates for Bumba, there is considerable scope for improving agricultural data collection and analysis. The unreliability of many of the estimates complicates analysis of trends as well as development planning.

B. Marketing of Agricultural Produce from North Kivu

As discussed in the section on the Bukavu food shed, North Kivu exports cattle, beans, maize, vegetables to South Kivu. Data on quantities transported by truck from Goma to Bukavu are unavailable but are reported to be low due to the deteriorating condition of the Goma-Bukavu road. Food shipments by SNCZ barge are insignificant, except for maize and beans. Cattle, cheese, butter, beans, and coffee are exported from North Kivu to Rwanda. Coffee and tea are also exported to Mombasa and Port Sudan by way of Uganda and Haut-Zaire. Air shipments of beef, potatoes and fresh vegetables from Goma to Kinshasa have increased since 1977, following the entry of Katale Aero Transport, Interfret, ZAS, Zaire Air Cargo, Lukas and other firms into the air transport business.

We were unable to obtain data on the volume of annual food crop, cash crop and beef exports from Goma, but it is probably on the order of 30 metric tons per day or 10,000 metric tons per year. The principal air transporters are Katale Aero Transport, MALIWA and Air Zaire. As shown in Table K-3, Katale shipped 5,233.7 metric tons of goods (and passengers) from Goma airport in 1982, including 856.6 tons of vegetables, 538.4 tons of other foodstuffs, 1,236.9 tons of beef, 1,516.6 tons of coffee and 175.9 tons of tea. MALIWA, a vegetable assembler and transporter based in Goma, as well as the North Kivu agent for ZAS, Interfret and Zaire Cargo, reports weekly air shipments of 20

TABLE K-2
Production and Commercialization of Principal Food Crops in North Kivu,
1979-1981

1979				1980				1981			
Area Cultivated (ha.)	Total Production (met. tons)	Proportion Sold (%)	Average Yield (kg./ha.)	Area Cultivated (ha.)	Total Production (met. tons)	Proportion Sold (%)	Average Yield (kg./ha.)	Area Cultivated (ha.)	Total Production (met. tons)	Proportion Sold (%)	Average Yield (kg./ha.)
16,236	15,702	14.0	967	12,127	10,173	30.6	839	18,267	13,568	7.8	743
10,250	27,266	10.9	901	30,725	16,715	19.2	544	35,716	26,326	12.5	743
19,210	997,534	13.1	11,182	132,464	1,671,147	7.0	12,616	105,157	1,279,969	19.7	12,172
14,552	187,703	5.1	5,433	26,524	149,705	5.4	5,644	24,933	144,259	6.8	5,786
17,272	162,330	17.2	1,183	120,492	132,774	7.3	1,102	110,549	142,026	4.0	1,285
10,776	173,706	25.2	1,017	173,594	168,665	32.0	972	196,633	191,387	28.2	973
18,028	21,423	18.5	764	22,291	20,313	12.4	911	28,910	20,126	16.4	696
13,874	102,184	10.7	1,017	37,825	151,752	17.0	4,012	34,839	194,450	9.2	5,581
17,354	54,304	26.8	806	53,289	38,630	16.5	725	53,784	35,604	13.8	662
17,225	685,564	14.2	10,198	66,287	393,883	3.3	5,942	56,434	349,770	2.4	6,198
1,930	15,892	100.0	498	33,083	18,048	100.0	546	30,219	17,552	99.7	581
15,577	20,986	100.0	571	37,542	27,311	100.0	727	37,379	37,139	99.5	994

-40-

Ministère des Affaires Économiques, Sous-Région du Nord-Kivu, Omas

In calculating the commercialized proportion of manioc production, it is assumed that the original figures for commercialized production are cassettes and the figures for production represent unprocessed manioc. Therefore, the original estimates of commercialized production are multiplied by three, assuming a cassette to tuber conversion ratio of 33%, to arrive at the approximate weight of marketed production in the form of cassettes.

TABLE K-3

Monthly Air Shipments of Goods and Passengers from Goma to Kinshasa by Katalo Aero Transport, 1982 (all units in Kilograms except for no. Flights)

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Total
20	27	31	26	27	24	27	14	15	31	25	33	300	
39.996	58.201	97.370	104.353	107.480	140.998	174.207	74.430	96.078	138.498	116.341	138.916	1.236.870	23.6
20.826	27.969	9.890	11.109	75.399	89.551	125.646	67.999	86.306	136.809	106.042	99.088	856.634	16.4
215.333	146.104	254.369	233.800	128.691	111.072	51.472	22.753	94.223	141.718	161.286	55.786	1.616.607	30.9
16.830	67.279	29.583	-	22.797	23.069	.84	-	400	-	1.500	14.370	175.912	3.4
14.929	127.103	62.061	14.847	72.717	6.315	77.835	113.168	24.202	42.929	15.210	9.922	581.238	11.1
17.443	5.783	15.706	17.950	18.611	20.087	60.578	37.463	15.501	26.359	21.310	281.625	538.419	10.3
6.650	15.700	13.900	20.600	9.200	5.500	5.900	2.800	2.500	7.600	11.000	9.000	110.350	2.1
6.375	6.600	4.700	6.000	5.000	3.000	4.700	2.700	1.900	4.800	6.200	8.950	60.925	1.2
2.795	6.933	3.357	5.032	4.400	4.113	6.565	2.009	2.429	3.156	2.946	13.044	56.779	1.1
341.177	461.672	490.936	413.691	444.295	403.705	456.987	323.322	323.542	501.869	441.835	630.703	5.233.734	100.0

Source: Katalo Aero Transport, Goma Office

Note: Periods (within numbers, French system) correspond to commas (English system).

unable to provide any breakdown by commodity and direction. As shown in Table K-5, 1,814.4 metric tons of beef were air freighted from Goma to Kinshasa, Lumbumbashi and other cities in 1981, while 1,576.7 tons were shipped in 1982.

A differential air freight rate schedule is used on the Goma-Kinshasa route. In mid-March 1983, goods flown to Kinshasa were hauled at 3.5 Zaires per kilogram by Interfret, 4.5 Zaires per kilogram by Katale Aero Transport and 6 Zaires per kilogram by Air Zaire. Freight costs will probably continue to rise, as fuel costs and the prices of spare parts increase. The rapid increases in the prices of vehicles, spare parts, fuel, cattle and high value agricultural commodities in recent months will complicate contract negotiations between traders based in Goma and buyers in Kinshasa and Lumbumbashi. Given the high cost of air-shipping produce to urban markets, it is only profitable to transport the highest value and most perishable foodstuffs by air.

While spoilage of beef shipped by air is minimal, MALIWA reports that losses of vegetables between point of assembly in North Kivu and final sale in Kinshasa approach 60%. This is due in part to the lack of sturdy containers for use in transporting vegetables, particularly over the poorly maintained roads of North Kivu. MALIWA is presently trying to reduce losses by reinforcing the flimsy, locally produced crates used in assembly and transport with wooden slats. Excessive spoilage may also result from not putting vegetables in cold storage prior to air shipment. Typically, assembly is timed so that the vegetables can be loaded with little delay on to arriving jets.

III. Constraints to Expanding Agricultural Production and Marketing in Kivu Region

Kivu Region, particularly North Kivu subregion, has vast agricultural potential for feeding the major cities of Zaire, particularly with high value foodstuffs. Yet exports from Kivu to other regions are far below this potential due to a number of serious geographical and economic constraints. The most obvious of these are the isolation of most of the region, resulting from the mountainous terrain, which makes road construction and maintenance difficult, and the distance of Kivu from the major population centers of Zaire (Kinshasa, the cities of South Shaba and the Kasais). The most binding of these constraints will be discussed below.

Transport. Trunk, secondary and feeder roads are inadequate and poorly maintained throughout Kivu Region. The region is poorly linked to Haut-Zaire, Shaba and Kisangani, through which large quantities of agricultural produce could be shipped to Kinshasa. Given present vehicle operating and amortization costs, truck transport from North and South Kivu to Kisangani is not economically viable. Roads which are traversed with difficulty during the dry season are impassable during the rainy season. Trucks acquired dearly on the black market via Rwanda, Uganda, and Burundi break down frequently, and spare parts, if available, are very costly. Fuel prices have also risen

Transport of agricultural produce via barges on Lakes Kivu and Tanganyika could be economically viable, but has not been fully exploited. SNCZ operates boats on Lake Kivu, but service is unreliable. Moreover, only two or three vessels are functioning. Although lake transport is available for moving goods between Goma and Bukavu and between Bukavu (via good roads to Uvira) and Kalemie, where there is a railhead, the terminal points are not well linked to other regions. Rail transport, which links Kindu with Shaba and Kisangani, is irregular and unreliable. SNCZ struggles to keep locomotives running, and Kindu has become an isolated enclave that is not linked to Bukavu and Goma by all-weather road.

Nearly all of the traders and officials interviewed stressed that agricultural production would increase in North and South Kivu provided producers' could be assured of regular access to markets. Secondary road maintenance is deplorable, and the feeder road network is poorly developed, leaving many potentially rich zones for agricultural production untapped. Trunk road maintenance is little better, as the major arteries connecting Goma with Kisangani (via Bani) and Bukavu with Goma, Kindu, and Kisangani (via Walikale and Lubutu) are impracticable during most of the year. The Germans have provided technical assistance to rehabilitate the Bukavu-Goma axis, but little progress has been made during the past four years. This is a technically difficult road to construct, as it passes through mountainous terrain over its 200 kilometer length. The FED funded the construction of a paved road from Kisangani to Lubutu, but the section between Kisangani and Pene-Tungu has deteriorated badly and construction of the remaining two-thirds has yet to be funded.

At present some thirty metric tons of high value agricultural produce are air-freighted from Goma to major cities of Zaire per day. Most of this produce is either exported (coffee, tea) or consumed by urban elites (beef, vegetables). In order to move large quantities of lower value per unit agricultural produce, such as manioc, maize, beans, bananas, sorghum, sweet potatoes, and peanuts, to the largest cities in Zaire, road, river, lake and rail transport links to other regions will need to be improved.

Marketing Credit. Limited access to credit seriously constrains the marketing activities of transporters and traders. Without formal credit it is difficult for all but the most well-financed entrepreneurs to acquire trucks, spare parts, cold storage units, and materials for constructing warehouses and storage depots. The principal Zairois commercial banks and SOFIDE will only grant loans when guarantees in the form of buildings and other fixed assets can be offered as collateral. Credit is also generally not available as a means of increasing working capital. Traders and transporters must pay cash for agricultural produce. Given lags in shipping goods and receiving payment, the rotation of working capital is slowed. This reduces the volume of transactions between traders and producers, increases the risk and uncertainty in producing and expediting agricultural goods, and generally dampens commercial activity in agriculture. Moreover, the need for merchants to pay high prices (often foreign exchange or high value commodities readily convertible into foreign exchange) for spare parts and fuel further diminishes

Soil Erosion. Much of North and South Kivu is mountainous and heavily forested terrain. Although the soils are fertile, clearing of forested hillsides for cultivation can lead to serious problems of soil erosion. Small farmers often cultivate up and down hillsides, and in many areas terracing is not practiced. In such instances the high annual rainfall washes away tons of valuable topsoil. In South Kivu, particularly in the food shed around Bukavu, population density and the demand for foodstuffs are high, and increasing areas have been deforested and put under food crop cultivation. This has led to considerable soil erosion, which in the long run will lower agricultural output per unit of land area and worsen South Kivu's food deficit, with especially serious consequences for the most nutritionally vulnerable groups.

Expansion of Gold Mining and Trading. As in the Kasai Regions, prospecting and trading in precious metals are no longer controlled, and strong incentives exist for small farmers to engage in these activities at the expense of agricultural production. The potential returns to mining and trading of precious metals are far higher than returns to farming. Plantations in South and North Kivu are alleged to have difficulty hiring sufficient numbers of laborers, which explains in part the stagnation in production of most cash crops in recent years.

In addition to the gold trade, there is no shortage of illicit trade in other commodities between Kivu and its neighbors of Rwanda, Burundi and Uganda. Although the risks of smuggling are quite high, returns to the cross-border trade in vehicles, spare parts, fuel, consumer goods, coffee, and other cash crops are potentially very handsome. As foreign exchange has become increasingly scarce, inducing hyperinflation in recent months, prices have increased less for basic foodstuffs than for imported goods. Incentives to grow crops such as manioc, maize, peanuts, sorghum, sweet potatoes, bananas, and beans for commercial sale are eroding as the terms of trade move against food crop producers.

IV. Livestock Production and Marketing in North Kivu

A. Cattle Production

North Kivu is the most important cattle producing and exporting region in Zaire. There are at least 245,000 head of cattle in the region, 85% of which are raised extensively and traditionally in holdings of less than 50 head, and 15% of which are raised under improved conditions in significantly larger holdings (more than 1,000 head).¹ Cattle ownership can be broken out roughly as follows; a dozen producers raise at least 1,000 head, some 100 producers own 50-1000 head, and at least 5,000 producers have holdings of less than 50 head. Typically small scale cattle producers own only three to six head. Improved cattle production is characterized by crossbreeding of the local Ankole breed with imported Brown Swiss cattle, regular vaccinations, administration of veterinary medicines, planting of pastures (Kikuyu grass, clover, Stylosetanthes), rotational grazing, and higher levels of herd offtake. The cattle producers practicing improved management, as well as many of the traditional producers, are organized in a producers' cooperative called ACOGENKI (Association Cooperative des Groupements d'Eleveurs du Nord Kivu). This cooperative was formed in 1979 under the direction of FAO and now has

fairly wide membership. The goal of ACOGENKI is to enroll all of the region's herders as members, regardless of the size of their holdings. Over the long run it is hoped that all of the cattle producers in North Kivu will adopt improved veterinary and pasture management practices. While funding for the FAO Projet de Developpement de l'Elevage du Nord-Kivu expired at the end of 1982, the Canadian International Development Agency (CIDA) has prepared a project that will continue promoting ACOGENKI and fund the construction of a modern slaughterhouse at Goma. This slaughterhouse would have a capacity of 3,500 metric tons of red meat per year, and it would supply Goma, which presently lacks a functioning slaughterhouse, Bukavu and South Kivu, Kinshasa and Lubumbashi. Although four Canadian technicians are working in Goma, the project has not yet been approved by the GOZ.

A feature of ACOGENKI that distinguishes it from many other organizations of cattle producers in sub-Saharan Africa is the established practice of paying the full cost of regular vaccinations and veterinary medicines. Cattle are vaccinated regularly against anthrax, while vaccinations against epidemic outbreaks, such as the recent outbreak of lumpy skin disease (dermatose), are administered free of charge.

Although beef is the principal output of cattle enterprises in North Kivu, production of dairy products has become increasingly important in recent years under the impetus of the FAO Project and attempts to promote dairy production by the missionaries at Lumbushere. There are no specialized dairy producers in the region, but the larger producers have put increasing emphasis on commercial dairy production. The mission at Lumbushere has promoted milk production among twelve medium sized producers, whose 150 cows produce about 1300 liters of milk per day. Fresh milk is transformed into cheese, butter and yogurt, which are sold in Goma, Rwanda and Kinshasa. Demand for dairy products from North Kivu is strong within the region, in adjacent regions and in Kinshasa, where buyers have difficulty procuring the quantities they need. The potential for promoting dairy production in North Kivu is therefore high in the medium to long run.

Cattle hides are also commercially exploited. BATA purchases hides in Goma and processes the leather into shoes in Kinshasa for domestic consumption. DERMA ZAIRE, a tannery with collection and processing facilities in Bukavu and Bunia, exports hides and skins to Western Europe.

B. Small Stock Production

According to the Veterinary Service, there were an estimated 291,000 goats, 116,000 sheep, 100,000 pigs, 61,000 rabbits and 373,000 chickens in North Kivu in 1981. These figures should be used with caution and may be substantially underestimated, given the Veterinary Service's preoccupation with cattle.¹ The greatest concentrations of small stock are in Lubero

¹ Dr. Leclerc, Chief of the CIDA staff at Goma, reports that there are approximately 400,000 goats in North Kivu.

and Beni, which are principally agricultural and not cattle raising zones, and to a lesser extent in Masisi, which has the highest density of cattle of all the zones in North Kivu.

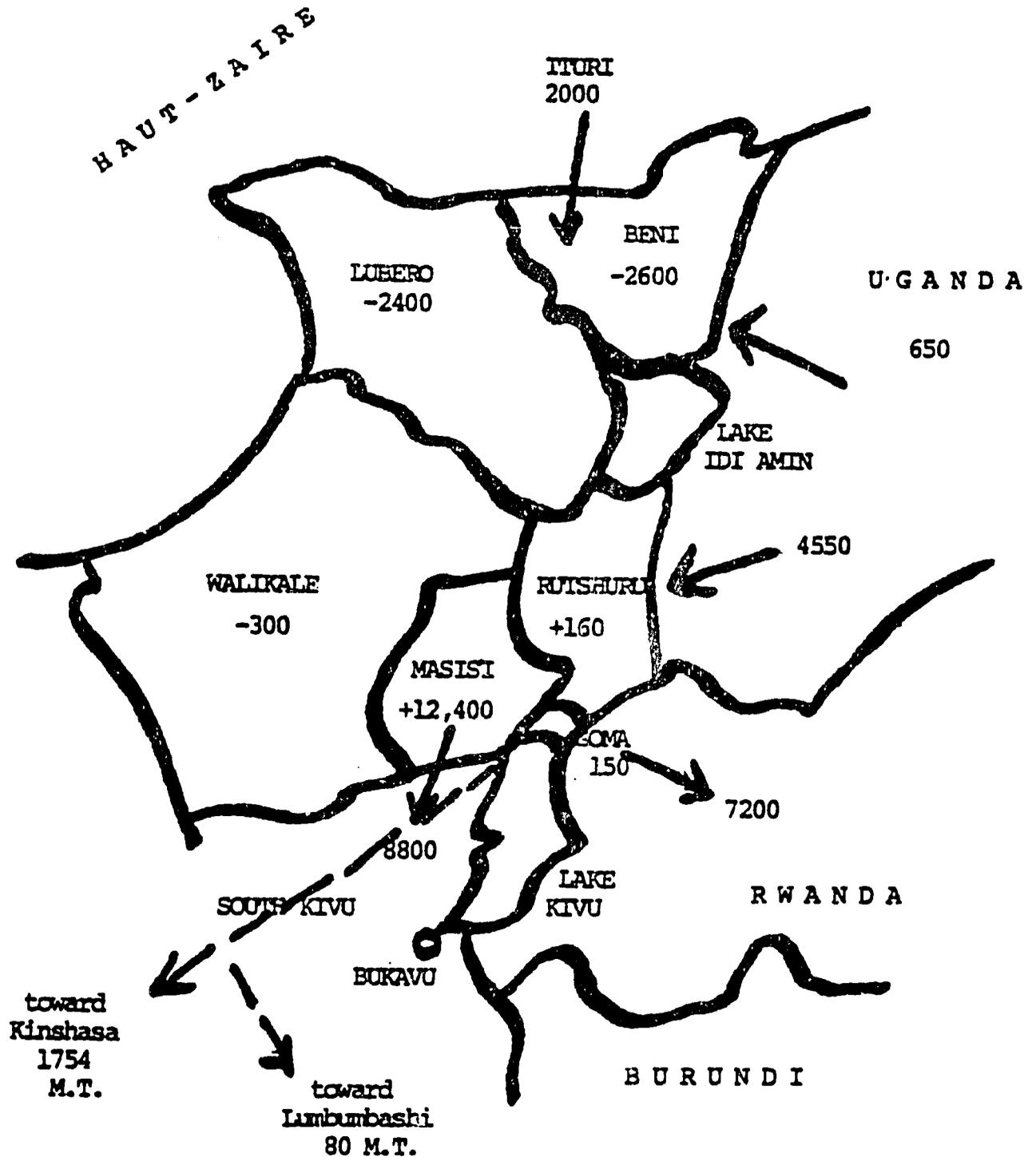
Small stock are an important resource for small farmers in North Kivu that provide milk (goats), meat, skins, and eggs for household consumption and sale. While cattle are rarely slaughtered for household consumption, small stock and fresh milk from cows provide animal protein for rural households in North Kivu. Marasmus and kwashiorkor, which are common in infants around Bukavu, an animal protein deficit area, are virtually unknown in North Kivu. Goats are an especially important source of animal protein that are often sold by rural households and slaughtered at weekly rural markets. In contrast, most of the beef produced in North Kivu is consumed in the larger towns or air-freighted to Kinshasa and Lumbumbashi.

Development interventions to date have focussed on improving cattle production in North Kivu. Some of the larger livestock producers raise sheep, which are sold for slaughter and export from the region, but goat meat is preferred to mutton by most consumers in the region. One of the expatriate technicians working in the FAO project attempted to introduce improved chicken breeds, but poultry production has not been promoted on a wide scale. The INERA station at Mulungu has also attempted to introduce cross-breeding of improved roosters with local hens, but poultry diseases have inflicted high mortality. Little or no effort has been made to upgrade pig production, as pigs are typically fed and allowed to scavenge for agricultural products and by-products, which are abundant in North Kivu. While pork was air shipped from Goma to Kinshasa in modest quantities two to three years ago, it is rarely exported at present, given the unsanitary and crude slaughter techniques and difficulties in conserving pork in transit. The potential for air-freighting pork, mutton, goat meat and poultry to Kinshasa may be limited, but there may be scope for promoting small stock production in North Kivu as a means of increasing rural households' incomes and animal protein consumption. Yet it is important to note that consumption of beef, small ruminant meat, pork, chicken and eggs has probably declined for most families in Kivu during the last few years. Inflation in the prices of animal protein sources has outstripped inflation in food crop prices, as shown in Table K-1. This has lowered animal protein consumption, particularly among lower income strata.

C. Cattle Marketing and Flows in North Kivu

The estimated flows of cattle into and out of North Kivu and its subregions are shown for 1981 in Figure K-1. As indicated in the cattle import-export balance sheet in Table K-4, North Kivu was a net exporter of some 21,450 head of cattle in 1981. An estimated 28,645 head were exported from North Kivu and some 7200 head were imported from Uganda and Haut-Zaïre in 1981. Some 8800 cattle were exported on the hoof to South Kivu, at least two-thirds of which were trekked to Bukavu. An estimated 12,645 head were also air-freighted to Kinshasa, Lumbumbashi and Kisangani in the form of

FIGURE K-1
ESTIMATED CATTLE FLOWS WITHIN, TO AND FROM NORTH KIVU, 1981



Source: F. J. Chagnaud, "Commercialisation du Betail et des Viandes dans le Nord-Kivu, "Rapport de Mission, FAO, Janvier 1982.

TABLE K-4
Cattle Import and Export Balance Sheet for North Kivu, 1981

<u>Cattle Exports by Destination</u>			<u>Cattle Imports by Source</u>		
	No. Head	%Total		No. Head	%Total
South Kivu	8,800	31%	Ituri (Haut-Zaire)	2,000	28%
Air Shipment of chilled beef to Kinshasa, Lumumbashi, Kisangani	12,645	44%	Uganda	5,200	72%
Rwanda	7,200	25%			
<hr/>			<hr/>		
Total	28,645	100%	Total	7,200	100%

Net Exports = plus or minus 21,450

Source: F. J. Chagnaud, "Commercialisation du Betail et des Viandes dans le Nord-Kivu (Republique du Zaïre)," Janvier 1982

chilled beef, and some 7200 head were trekked to Rwanda.¹

As shown in Figure K-1, Masisi is the principal cattle surplus zone in the North Kivu subregion. Some 170,000 head of cattle or nearly 70% of the subregional herd are raised in Masisi, which is endowed with abundant pasture at altitudes of 1000-2000 meters. Lubero and Beri, the principally agricultural zones in the northern reaches of North Kivu, are cattle deficit regions supplied in part by animals from Haut-Zaire and Uganda. The three remaining zones of North Kivu are only mildly deficitary (Walikale) or surplus (Rutshuru and Goma) regions.

The principal cattle market of North Kivu is held weekly (Friday) at Mushaki, which is 45 kilometers northwest of Goma. Some 350-400 head of cattle are offered for sale each market day. Cattle are trekked from Uganda, Masisi and Rutshuru and assembled for export to Sukavu, Rwanda and Kinshasa via Goma. The principal buyers at Mushaki are a handful of traders based in Goma as well as butchers and butcher-traders from Goma and Bukavu. The traders from Goma are either expatriates who own and operate cold storage units or Zairois cattle producers who are also wholesale butchers and traders. Both types of traders buy cattle for slaughter and export of chilled beef to Kinshasa and Lumbumbashi. Total cold storage capacity at Goma was 1046 cubic meters in January 1983, as no less than ten establishments used and rented out cold storage for beef.² The largest cold storage capacity is operated by Nungo Frigo, which presently has 220 cubic meters and is awaiting the arrival of an additional unit with 110 cubic meters storage capacity. Nungo Frigo reports having air-shipped nearly 300 metric tons of beef to Kinshasa and Lumbumbashi during 1982.

¹ The number of cattle slaughtered for air shipment to Kinshasa is calculated by assuming that 85% of the animals were unimproved local breeds (carcass weight of 125 kilograms) and the remaining 15% were improved crossbred stock (carcass weight of 250 kilograms). The estimate is taken from F.J. Chagnaud (FAO, 1982).

² Dr. Mampuya Luvuangu, "L'abattoir de Goma" et la Commercialization du Betail et des Viandes", Janvier 1983.

The quantities of chilled beef air-freighted from Goma expanded rapidly from 1979 to 1981, following the termination of Air Zaire's monopoly on air freight in 1977. As shown in Table K-5, exports of chilled beef by air rose from 248.0 metric tons in 1979 to 1814.4 metric tons in 1981. Ninety-five percent or more of the beef was shipped to Kinshasa from 1979 to 1981. Beginning in August 1981, three firms in Goma signed contracts with GECAMINES to supply beef on a regular basis and 215.2 metric tons or 13.6% of total exports were air-freighted to Lumbumbashi in 1982. Overall exports declined in 1982 to 1578.7 metric tons, however, due to the 21% decline in air shipments to Kinshasa.

At least two-thirds of the chilled beef flown from Goma to other cities in Zaire was shipped by Katale Aero Transport in each of the years from 1979-1982 except for 1981, when only 55-60% was transported by Katale. Air Zaire shipped 20-25% of the exported beef from 1980 through 1982, while Inter-Fret, Z.A.S., Zaire Cargo and Lukas transported most of the remaining beef. The principal aircraft for shipping the beef, as well as high-value cash and food crops, are Boeing 707s, DC-8s and C-130 air-freighters. Air freight charges were 3.5-4.5 Zaires per kilogram in mid-March 1983 but are likely to rise further, as the Zaire continues to depreciate vis-a-vis the dollar and other hard currencies on the parallel market. Beef is typically chilled for at least 48 hours in cold storage units at Goma before being air-shipped. Total transit time between cold storage units in Goma and Kinshasa is less than seven hours and spoilage is minimal.

D. Constraints to Expanding Livestock Production and Exports.

The potential for expanding beef and dairy production in North Kivu has barely been tapped. North Kivu has some of the finest rangeland in Africa, and stocking rates could be considerably higher than at present. The most constraining factors to expanding output are the generally low level of management practiced by most producers and the underfunding and understaffing of the regional Veterinary Service. The Canadian livestock development project, which will probably be fully funded by the summer of 1983, (four million Canadian dollars over five years) aims to improve the management and veterinary/extension programs of ACOGENKI. Veterinarians working under the Department of Agriculture will be retrained and assigned to ACOGENKI. If successfully implemented, the CIDA project will help to alleviate constraints to expanding livestock production.

TABLE K-5

Annual Air Shipments of Beef^a from the Goma Airport
by Destination, 1979-1982
(in Metric Tons)

Destination Years	Kinshasa		Lumbumbashi		Other Cities ^b		Total
	Quantity	%Total	Quantity	%Total	Quantity	%Total	
1979	239.9	96.7%	0.8	0.3%	7.4	3.0%	248.0
1980	1372.9	99.2%	5.2	0.4%	6.4	0.5%	1384.5
1981	1722.9	95.0%	80.0	4.4%	11.5	0.6%	1814.4
1982	1358.4	86.0%	215.2	13.6%	5.1	0.3%	1578.7

Source: République du Zaïre, Département de l'Agriculture, du Développement Rural et de l'Environnement, Service de la Production et de Santé Animale, Région du Kivu, Sous-Région du Nord Kivu, "L'Abattoir de Goma" et la Commercialisation du Bétail et des Viandes, Rapport présenté par Dr. Mampuya Luvuangu, Médecin Vétérinaire, Janvier 1983

Note: Some of the totals (for quantities and percentages) are not equal to the sum of the subtotals due to rounding errors.

^a The quantities of beef are expressed in terms of carcass weight (four quarters), although most of the beef was deboned before air shipment.

^b The category "other cities" includes Kisangani, Mbuji-Mayi and Kalima.

limited to 5000 metric tons, due to the abundance of methane gas. Lake Idi Amin has an annual production potential of some 50,000 metric tons.

Fish are an important source of animal protein for urban consumers in Goma and Bukavu, even though production in Lake Kivu is low. Smoked, salted and fresh fish are purchased by private transporters and traders from the fishing cooperative COPEVI at the southern end of Lake Idi Amin and trucked to Goma. Fish caught by industrial fishermen and fishing cooperatives (COPELAZ and COJEPU) based in Uvira, on the northern end of Lake Tanganyika, are trucked over generally good roads to Bukavu.² Smuggling of fish caught on the Zaire side of Lake Tanganyika to Bujumbura is also widespread.

The team had an opportunity to interview the manager of COPEVI, Cooperative des Pêcheurs de Vitshumbi, which was formed in 1949. The COPEVI fleet is composed of 150 motorised canoes, powered by six horsepower outboard motors, and 80 non-motorised canoes. Each canoe is manned by six men, and the cooperative employs an additional 230 laborers, resulting in total membership of about 1400. Artisanal fishing methods have been employed exclusively in recent years, and annual output has fallen dramatically from 2295.8 metric tons in 1975 to 869.2 metric tons in 1982, as shown in Table K-6. COPEVI has applied for a four million Zaire loan from SOFIDE, which would be used for purchasing four motorised fishing boats plus spare parts and fishing nets, which are in short supply in Kivu. A SOFIDE agent came from Kinshasa to gather information on the cooperative, but no action has been taken on the loan to date.

COPEVI is essentially a production and not a marketing cooperative. Before Independence, COPEVI operated cold storage units and a fleet of trucks, which transported fresh, smoked and salted fish to Goma and Bukavu. There is still one operating cold storage unit, but it is rarely operated due to high fuel costs. Hence, most fish is now salted or smoked prior to sale. In addition, there are only two remaining trucks, so COPEVI is forced to rely upon merchants based in Goma and Bukavu for marketing of its fish. COPEVI has not negotiated contracts with any traders; the latter simply arrive and buy fish on an ad hoc basis. None of these trader-transporters has refrigerated trucks, but they often bring ice from Goma and Bukavu for chilling the fish on the return voyage. If COPEVI does receive a loan from SOFIDE to upgrade fishing operations on Lake Idi Amin, it may be desirable to provide funds for the purchase of additional trucks, renovation of cold storage units, and organization of fish marketing. If production increases outstrip regional demand for fish, then provisions may need to be made for coordinating shipment of fish to other regions, such as Kinshasa. Contracts between COPEVI and wholesale traders based in Goma could be negotiated for supplying Kinshasa and other urban centers.

² See Bruce Spake and Tshishiku Kabundi, "Trip Report on Visit to Uvira, Ruzizi Valley, and Kalemie from March 2 through March 14, 1982", March 1982, for a discussion of the fishing industry on Lake Tanganyika.

TABLE K-6

MONTHLY FISH PRODUCTION BY COPEVI (Cooperative des Pecheurs de Vitshumbi)
1975-1982 (in Metric Tons)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
January	258.7	101.0	78.5	48.9	70.2	110.7	46.8	48.0	34.4
February	259.2	55.5	138.8	129.4	96.0	69.3	47.2	53.6	
March	276.3	111.7	172.4	188.6	66.7	62.4	12.4	70.5	
April	161.1	90.9	150.9	97.2	64.1	91.3	1.6	73.9	
May	185.0	101.1	85.3	91.4	59.5	91.4	125.4	47.4	
June	107.9	115.9	53.7	155.1	45.3	101.1	58.3	21.0	
July	113.9	175.0	90.3	191.5	135.8	109.7	96.6	5.4	
August	304.2	241.7	101.3	164.9	262.2	197.9	250.4	11.9	
September	258.6	331.3	98.8	195.6	246.1	135.3	210.9	132.5	
October	188.4	220.1	132.2	93.4	213.6	134.2	163.4	152.1	
November	65.2	70.3	137.3	17.2	318.8	79.9	64.6	141.9	
December	115.3	42.6	132.2	8.5	157.3	70.3	46.9	111.0	
Totals	2295.8	1656.9	1371.6	1381.6	1634.3	1253.9	1120.5	869.2	

Source: COPEVI, Vitshumbi

Rice Production and Marketing in Bumba

I. Summary and Policy Conclusions

A. Introduction

Bumba's population is estimated to be around 70,000; however, apart from a sprawling cite, the city is a small conglomerate of GOZ offices and facilities (ONATRA and SNCZ) and rice and coffee mills nestled along the bank of the river. The city has electricity from 1800 to 2100. Few vehicles are on the roads and most of them belong to rice millers.

The major food crops are rice, manioc, corn, bananas and peanuts. Local consumption of rice, even among the rural producers, is quite low (about 10% of total output); the staple crop is manioc. In addition, there is some unorganized river fishing and limited, small-scale livestock production. Cash crops are rice, coffee and palm oil (at PLZ).

The GOZ maintains a Programme National Riz (PNR) station in Bumba. The station was once supported by Nationalist Chinese technical assistance and later under a PRC project. Although the station does receive experimentation seeds from FAO, it lacks adequate operating funds and equipment (viz. one out of six tractors is in use) to perform good variety trials. PNR stays alive by selling seed to the major millers who, in turn, distribute it and sacks to producers.

Rice milling and marketing are highly concentrated in four well-established firms: Nogueira, Griza, Scibe-Zaire and Comagrin. These four have their own association, separate from the local ANEZA, which lobbies directly to the Commissaire d'Etat a l'Economie Nationale, Commerce et Industrie in Kinshasa to set producer and wholesale prices. They also control an association Fonds de Relance Economique. The "Big 4" control about 87% of the market. A new firm, Socam, acts independently and has about 7% of the market.

Although any data are highly suspect, the following income levels reported by rice millers and plantation owners indicate that most incomes are very low:

Current Monthly Salary	
<u>Type of Worker</u>	<u>in Zaires</u>
PLZ worker/cantonnier	88
 Rice Mill:	
Worker	126
Chauffeur	157
Mechanic aid	157
Mechanic	400
Factory Supervisor	490
Expatriate technician	30,000

Under conditions of hyperinflation, such low incomes must be a brake on effective demand, even for locally-produced goods.

B. Constraints to Production

Conde characterizes rice production in Zaire as planting of low grade seed with poor tools in a shifting cultivation system. This is an apt description of Bumba. Virtually everyone contacted identified degenerating seeds (R66) as the cause of low yield and low quality rice output. Seeds come from PNR and millers' own stocks; no independent commercial seed multiplication exists. To the producer, rice is an economically and politically imposed culture for which there is no incentive to promote quality, no effective extension system to diffuse improved seeds/practices (such as insecticides), and no appropriate improved technology on hand to diffuse. Some areas have such limited road access that rice marketing does not take place until three to four months after the end of the regular campaign. According to Conde and our own interview information, the amount of land under rice cultivation is a function of available female labor.

C. Constraints to Market Access and Marketing

The following constraints were identified by rice millers:

1. Irregular supply of sacks.
2. Lack of reliability and high theft on ONATRA-SNCZ transport.
3. Buying zones change too often; therefore, no incentive to maintain roads, build social infrastructure.
4. Lack of adequate roads and SNCZ locomotives.
5. Low fuel allocations.
6. Lack of own transport and spare parts.

The following additional constraints were mentioned by informants other than GOZ officials and rice millers/traders:

7. Monopoly concentration due to buying zones.
8. Ineffective use (in both economic and social terms) of Fonds de Relance Economique.
9. Non-existent or weak local institutions.
10. Imposed rice culture and fixed prices; merchants force producers to over-fill sacks or underweigh.
11. Volatile prices of consumer goods due to erratic supply.
12. Lack of credit for small traders and producers.
13. Ineffectiveness of agricultural extension service.

Given the range of interviews, it should be obvious that these constraints are not shared universally. Most

millers and traders complained about 1 through 3; most non-traders argued that 7 and 8 were priority constraints.

All of these constraints impede effective rice marketing and have disincentive impacts on production. The only source of possible relief to some of the constraints is the Fonds de Relance Economique. However, the fund does not appear to be achieving its declared purposes and most of the amounts collected remain in local banks. The large rice millers did not complain about the lack of marketing credit, since the Fonds de Relance have served as interest free loans for rice buying. Access to formal credit restricts entry into rice marketing and milling, however, for smaller traders.

D. Potentials

Bumba has three significant advantages:

- ease of river transport
- flat terrain
- any increases in rice production would increase food security and decrease foreign exchange costs of imports

Improvements in quality seeds could directly increase yields by about 50%. Better seeds would also improve the quality of rice and rate of conversion of paddy to rice. In addition, a higher price to producers might lead to an increase in the area planted. None of the millers interviewed were operating near capacity. Increasing production of paddy could therefore lead to greater economies of scale and a lower effective price on the Kinshasa market, hence stimulating consumption by lower income groups.

II. Rice Production and Marketing

A. Rice Production

Rice is the principal food crop in Bumba zone and an imposed crop for all rural households in the region. Each household is required to cultivate at least one-half hectare of upland rice. Very little of the paddy produced, probably 10-20%, is consumed by the cultivating households. Manioc is the staple crop in Bumba.

According to the Department of Agriculture statistics (see Table B-1), paddy production increased 25% between 1979-80 (27,840 metric tons) and 1981-82 (34,806 tons) in Bumba. The area cultivated remained relatively constant (26,000 - 27,700 Hectares), while yields increased from 1072 to 1300 Kilograms per hectare. This estimate of yield increases is implausible, given allegations of the deteriorating quality of rice seed. The commercialized

TABLE B-1

Paddy Production in the Bumba Zone, 1979/80 through
1981/82

	1979-80	1980-81	1981-82
No. of Rice Cultivators	31,254	32,339	32,626
Total Area Cultivated (Ha.)	25,960	27,691	26,774
Total Production (MT)	27,840	28,267	34,806
Average Yield (Kg.)	1,072	1,021	1,300
Production per Cultivator (Kg.)	891	874	1,067
Marketed Quantity (MT)	-	24,027	27,448
Marketed Proportion (%)	-	85	79

Sources: Programme National Riz, Station de Bumba;
Agronome du Zone, Bumba

proportion of the rice crop was 85% in 1980-81 (24,027 metric tons) and 79% in 1981-82 (27,448 tons).

Virtually all of the paddy grown is upland rice, despite the efforts of the PNR (Programme National Riz) to promote irrigated rice production along the Zaire River and its tributaries. The area around Bumba is heavily forested, so land must be cleared before rice is planted. This is a labor-intensive process carried out by men; bush-clearing is a constraint to putting further land under cultivation. Land is cleared in January and February, and the rice is sown in March and April. The rice harvest takes place in September and October.

The principal variety of rice in the Bumba region is R66, introduced by the FAO and cultivated in pure stands at PNR experiment and seed multiplication centers. The R66 variety produces higher yields than the local varieties, and its rice grains are not as fully exposed to damage by birds at the time of flowering as the indigenous varieties. PNR has experimented with many other rice varieties at its irrigated station, established by the Taiwanese in the early 1970s, but it has found the R66 yields most satisfactory in upland production conditions.

Taiwanese aid to the PNR was followed by technical assistance from the People's Republic of China in the second half of the 1970s. The PNR station in Bumba is no longer supported by the PRC, and most of its equipment (tractors, jeeps, trucks, motorcycles, irrigation pumps, small mills) is no longer in working order. This has caused output of rice seed for distribution to regional farmers to fall from 33 metric tons in 1980 to 21-22 tons in 1982. PNR seed is distributed via rice milling firms. They claim that the paddy has degenerated greatly since the departure of the PRC technicians and that an increasing proportion of the seed is lower grade, unmilled paddy produced during the previous year. The rice millers report a milling ratio of 50-55% (milled rice/paddy ratio by weight), although it is typical to achieve at least 65% in other countries. Impurities and low quality paddy are responsible for the poor milling ratio.

In 1983 the PNR seed multiplication program is behind schedule and will result in low, inadequate seed production. Only one tractor is functioning; others lack spare parts or have been cannibalized beyond the point of salvage. Hand preparation of seed beds is possible but time-consuming, costly and beyond the limited means of the PNR, which was forced to cut its staff back by one-third during 1982. The PNR station at Bumba employed 180 technicians, laborers, clerks, drivers and mechanics at the beginning of 1982 but only 123 people by the end of the year. The PNR staff is very discouraged and requests USAID assistance in procuring

at least one tractor, one jeep, a truck and at least three motorcycles.

B. Rice Marketing and Processing

As mentioned above, 80-90% of the paddy produced in the Bumba zone is sold to millers, who transform the paddy and ship most the milled rice to other cities in Zaire. The PNR staff estimates that at least 80% of the milled rice is shipped to Kinshasa, while the remaining 20% is sold in Bumba, Kisangani, and Mbandaka. The large millers have offices in Kinshasa, while the less well-established millers sell rice under contract or through other traders in Kinshasa.

Each of the milling companies has separate buying zones in which it exercises monopsony rights. The Bumba region was formerly divided between the largest four millers (Comagrin, Griza, Scibe Zaire, Nogueira), but the entry of Socam and a dozen or so smaller millers into rice marketing has led to redistribution of the buying zones in recent years. The criteria used in this reapportionment are not fully understood, but the local political authorities have intervened and are alleged to be swayed by a number of economic and non-economic considerations. The large established firms argue that continual readjustment of their buying zones undermines incentives to maintain roads, operate rural canteens, and provide social services, such as dispensaries and schools.

Paddy buying begins in November and ends in late March or April. The larger millers operate fleets of 10-15 trucks and garages for routine maintenance and repairs. Most of the rice mills (all of the larger firms' except for Scibe) are located at Bumba near the waterfront of the Zaire River. The six largest millers bought 93.5% of the paddy marketed in Bumba zone in 1981-82, which is evidence of high concentration (see Table B-2). The smaller millers own far fewer vehicles and are obliged to rent vehicles or space on vehicles. Fuel is rarely available at the official price and cost 1400-1500 Zaires per 200 liter drum at the parallel rate in March 1983. As in other regions of Zaire, limited access to vehicles, spare parts and fuel constrains rice marketing in Bumba.

Sacks are also in short supply in Bumba zone. The large millers are able to buy new sacks from TISSAKIN in Kinshasa. They air-freight (Scibe) the sacks or ship them by barge (the other firms) to Bumba. Firms without access to TISSAKIN sacks obtain sacks used in wheat flour marketing.

The current paddy price in the Bumba region is 60 Zaires per sack or one Zaire per kilogram. The inflationary pressures on paddy prices in Kwilu Subregion do not appear to plague Bumba zone. This is due in part to the distance of

TABLE B-2

Market Shares of Principal Firms in Purchasing
Paddy in the Bumba Zone, 1981-82

No.	Name of Firm	Quantity of Paddy Bought (in metric tons)	Cumulative Proportion (%) of Total
01	NOGUEIRA	4112.4	22.5
02	RIZERIE ITIMBIRI	5456.6	42.8
03	SCIBE ZAIRE/WINDONGA	4800.0	60.7
04	G R I Z A	4112.4	76.1
05	COMAGRIN	2873.4	86.8
06	S O C A M	1790.5	93.5
07	Enterprises Mangando	334.3	94.8
08	Next Three Largest Firms	627.0	97.1
09	Next Five Largest Firms	588.8	99.3
10	Remaining Four Firms	184.4	100.0
	TOTAL	26790.0	100.0

SOURCE: Programme National Riz, Station de Bumba.

Note: The Rizerie Itimbiri is an independent miller that supplies Scibe Zaire.

Bumba from Kinshasa, which contrasts with Kwilu's proximity. Yet the concentration of rice marketing and milling is the principal reason for low farmgate prices in Bumba region. Farmgate prices are set by the largest four millers in cooperation with local authorities and the Ministry of National Economy, Commerce and Industry. The four principal millers are required to submit detailed estimates of assembly and milling costs to the Ministry of National Economy, Commerce and Industry. These costs include a 20% milling margin, which is the legally allowable margin to processors of agricultural commodities. There appear to be opportunities for collusion and influence peddling, as the largest firms all have offices in Kinshasa (where the suggested price is approved). During the buying campaign the administered price is effectively a ceiling price. There are few allegations of unfair practices. Such practices are not necessary, however, since the cartel is able to enforce the low administered price.

The poor condition of the rural roads is a serious constraint to increased marketing of paddy. The Office des Routes maintains national roads, and PLZ has a contract with the OR to maintain some regional roads in the Bumba zone. Under a convention signed with the Executive Council the large rice millers are authorized to collect a surcharge of 11 Zaires per sack on milled rice, which is earmarked for rural road maintenance under the Fonds de Relance Economique. To date, the millers have repaired some bridges in their buying zones, but a large part of the revenues have served as interest-free agricultural marketing credit. The Fonds de Relance are also supposed to be used for building schools and dispensaries. While several of the millers plan to do this, they have provided few social services to date. The millers argue that redistribution and contraction of rice buying zones undermines incentives to develop social infrastructure. The historical record of the large firms, which have operated in the Bumba zone for many years, is poor in the area of social services, however.

Milled rice is shipped by large firms to cities such as Kinshasa, Mbandaka and Kisangani. ONATRA used to transport nearly all of the rice, but theft, delays and irregularity of service have compelled the millers to ship increasingly by private companies since the late 1970s. According to recorded estimates, private transporters shipped 3446.3 metric tons of milled rice from Bumba in 1982 (see Table B-3), while ONATRA shipped 1842 tons (see Table B-6). Using these data, we calculate that 65% of the rice was transported by private carriers. Yet total recorded shipments (5288.3 metric tons) are only 44% of estimated shipments. PNR

TABLE B-3

MONTHLY SHIPMENTS OF RICE BY PRIVATE TRANSPORTERS FROM BUMBA,
January-December, 1982
(metric tons)

	<u>Shipments</u>
January	136.5
February	47.8
March	53.4
April	837.7
May	530.7
June	420.4
July	150.5
August	356.9
September	112.5
October	134.2
November	286.2
December	379.7
<hr/>	
Total	3446.3

Source: OZAC, Bumba Office

reports that the rice millers in Bumba bought 26,790 metric tons of paddy in 1981-82 (see Table B-2). Assuming a milling conversion ration of 0.5, total production of milled rice was 13,395 metric tons in 1982. If 90% of this rice was shipped to other towns in Zaire, then at least 12,000 tons were transported by ONATRA and private shippers. Assuming that the ONATRA figures are correct and that private transport is underrecorded, 85% of the rice was shipped by private companies in 1982.

The SFMA team did not have an opportunity to study rice marketing in urban markets (particularly Kinshasa), so rice pricing and distribution in final markets remain poorly understood. The factory gate price for rice was 327 Zaires per 60 kilogram sack (5.5 K/kg.) in March 1983, while the retail price was 383 Zaires per sack in Bumba. The wholesale rice price in Kinshasa was about 700 Zaires per sack (or 11.7 Zaires per kilogram) in March 1983. Retail prices recorded in urban markets of Kinshasa were 13.6 Zaires per kilogram in December 1982.¹ Imported rice, acquired at the official exchange rate, is of higher quality and competes with Bumba and Bandundu rice. In December 1982 consumers were paying 18.4 Zaires per kilogram for imported rice, a 35% premium over rice produced in Zaire. There is need for further applied research on rice supply and demand in Kinshasa, the major market for Zairian and imported rice. A detailed study of rice marketing in Kinshasa should precede any interventions in the rice subsector in Bumba (or Bandundu).

III. Principal Constraints to Expanding Rice Production and Marketing in Bumba

A. Production Constraints

The degeneration of rice seed in the Bumba area and the inability of PNR to produce enough seed to regenerate the regional seed supply constitute the greatest constraints to increasing rice production. PNR is operating at only a fraction of its former capacity and lacks funds, material and motivation. The large rice millers regard seed multiplication as the responsibility of the GOZ (eg. PNR) and do not produce seed themselves. If PNR seed production continues to decline, the millers may be compelled to produce seed for distribution to farmers themselves.

The absence of modern agricultural inputs, such as fertilizer, pesticides, and tractors or animal traction, keeps paddy yields at low levels. The agricultural extension service is poorly equipped and trained. Extension agents do little other than ensure that producers cultivate imposed crops and attempt to collect some ad hoc production and marketing data.

¹ Bureau d'Analyse Economique, Service d'Etudes, Departement d'Agriculture et du Developpement Rural, Republique du Zaire. Forthcoming study on retail prices for

Finally, rice pricing policy constrains production of paddy. Farmgate price increases have not kept pace with the inflation in the prices of consumer goods. As in other regions of Zaire, prices of consumer goods more than doubled over a twelve month period from early 1982 through March 1983 (see Table B-4). Moreover, consumer goods are not always available in rural areas. The rice millers operate some rural canteens, and some small traders offer consumer goods for sale when they buy agricultural produce. Yet the regional supply of consumer goods depends on supplies in Kinshasa and by extension stocks held by the large trading and rice milling firms in Bumba. Consumer goods are available irregularly and often at exorbitant prices in many rural areas, which erodes incentives to produce cash crops such as rice.

B. Constraints to Improving Rice Marketing

Rice marketing is constrained by most of the same factors influencing marketing of food crops in other regions. Scarcities of vehicles, spare parts, fuel and other material plague all marketing agents, but especially smaller traders and millers, who lack the Kinshasa connections to obtain these commodities. Bumba's isolation from Kinshasa gives the large millers with offices in the capital a great advantage in procuring essential marketing inputs, including capital for investments and agricultural buying credit. Large firms acquire agricultural marketing credit from the BCZ at an interest rate of 11% for six months. Limited access to capital and materials keeps smaller traders from expanding their operations. Moreover, ANEZA is a weak and ineffectual organization lacking coherent strategies for improving the lot of small traders and rice marketing.

The five largest companies are able to use their market power to collect oligopoly rents in the purchase and processing of paddy. They are able to administer farmgate prices, which are low relative to other rice-producing regions of Zaire. The rice millers cannot buy paddy at prices that are too low, however, without risk of undercutting production incentives. Yet poor producer knowledge of market conditions in Kinshasa and the absence of any producer organizations for improving prices and marketing presently work to the millers' advantage.

The deteriorating state of the road network also constrains marketing of rice and other food crops. Vehicle operating costs and down time are high. The rapidity with which foodstuffs are evacuated and capital turned over is therefore slowed. Office des Routes poorly maintains national roads, and the rice millers do the bare minimum to enable their vehicles to reach production zones via secondary roads. The shifting of buying zones in recent years has also undermined miller's incentives to maintain or improve rural roads. Yet inadequate supervision of the Fonds de Relance

TABLE B-4

Prices for Selected Consumer Goods in Itimbri Collectivity
(Bumba Zone), Early 1982 and March 1983 (in Zaires)

	<u>Early 1982</u>	<u>March 1983</u>
Gasoline (200 liter drum)	1100	2500
Bicycle	800-1000	2000
Salt	40-50	200
Sugar	60	150

Source: Cit. Ebunde Monga Adala Ekundakunda, Chef de
Collectivite, Itimbiri

revenues has encouraged milling firms to divert funds to other uses, principally agricultural buying. Better monitoring of road maintenance by the OR and rice milling companies is critical to improving input, produce and consumer goods' marketing.

IV. Production and Marketing of Other Foodcrops

The SFMA team did not focus on crops other than rice in the Bumba area, but production and marketing estimates were obtained from the local Department of Agriculture (DOA) office. As shown in Table B-5, manioc is the principal staple crop. The DOA estimates indicate that 60-65% of the manioc crop (expressed in tons of cossettes) is marketed, which is implausibly high. Bananas are also an important crop, but again the estimates of the commercialized proportion of production (97-98%) are unexplicably high. Palm oil is produced in large quantity, especially by PLZ, which operates a plantation near Bumba. Production data were not obtained from PLZ, but ONATRA figures show that palm oil and palm kernel shipments from Bumba are significant (see Table B-6). ONATRA is the sole transporter of PLZ products, so their data should capture most of the PLZ production.

Maize and peanuts are secondary crops which are marketed from mid-April through mid-August. Small traders assemble these crops, buying in rural areas, storing the crops near the roads, and renting trucks to evacuate the produce. Conde reports that women traders based in Kinshasa carry out an important part in this trade, often supplying rural producers with consumer goods in exchange for the food crops. The quantities of agricultural commodities shipped by ONATRA from the port of Bumba are shown in Table B-6 for 1981 and 1982.

Coffee is an important cash crop for smallholders in all of Equateur Region. A good part of the robusta harvest is exported illegally via the Central African Republic and Congo Braazaville in order to obtain hard currency.

TABLE B-5

Estimated Production of Principal Food Crops in the Bamba Zone, 1979-80
through 1981-82

Crop	1979-80 ^a			1980-81				1981-82			
	Area Cultivated (ha.)	Total Production (met. tons)	Yield (kg./ha.)	Area Cultivated (ha.)	Total Production (met. tons)	Proportion Sold	Yield (kg./ha.)	Area Cultivated (ha.)	Total Production (met. tons)	Proportion Sold	Yield (kg./ha.)
Rice	27,960	27,840	1,072	27,691	28,267	85%	1,021	26,774	34,806	79%	1,300
Manioc	21,952	439,040	20,000	23,199	428,471	60%	18,469	23,731	436,772	65%	18,405
Maize	9,613	7,690	800	10,133	8,170	80%	806	11,488	9,795	83%	853
Bananas	9,778	48,890	5,000	11,009	49,152	98%	4,465	11,649	49,269	97%	4,229
Peanut	3,250	2,660	800	3,479	3,097	94%	890	3,998	3,185	90%	797

Source: Unpublished data prepared by the Agronomes du Zone, Bamba.

NOTE: The estimates of the proportion of total production sold are probably quite accurate for rice but are implausibly high for the other foodcrops. It is unlikely that even 50% of the harvested quantities of manioc, maize, bananas and peanut are sold, since these crops are staple foodstuffs.

Estimates of the commercialized proportion of total production are not available for 1979-80.

68

69
TABLE B-6

Quantities of Agricultural Commodities Transported by
ONATRA from Bumba to All Ports on the Zaire River,
1981 and 1982 (in metric tons)

	1981	1982
Coffee	7961	1745
Rice	1710	1842
Rice Bran	547	514
Paddy	15	150
Maize	75	n.a.
Manioc (cossettes)	103	181
Peanuts	125	n.a.
Tobacco	325	n.a.
Cotton	1219	417
Palm Oil	9662	7002
Palm Kernels	4300	2584
Cacao	322	n.a.

Source: ONATRA, Eumba

Note: ONATRA prepared the 1982 estimates for the SFMA team in Bumba. The data do not appear to be complete, however.

ANNEX 5

Agricultural Marketing in Kwilu Subregion (Bandundu)

I. Summary and Policy Conclusions

As the fourth reconnaissance survey in a study of agricultural marketing in four regions of Zaire, USAID/KIN and the SPMA project spent one week collecting information and interviewing trading companies, small and medium scale merchants, missionaries, farmers and government officials in Kikwit, Idiofa and Bulungu. Kwilu Subregion is an important supplier of basic foodstuffs to the capital, given its proximity to Kinshasa (525 kilometers) and the existence of a first-class paved road between Kikwit and Kinshasa. According to most observers and agricultural statistics, food crop production has increased significantly since the completion of the paved road (1977) and in 1982-83 following the liberalization of agricultural commodity prices. The demand for basic foodstuffs in Kinshasa, the second largest city in Africa (estimated population of 2.5-3.0 million), are enormous, and there is evidence that the positive supply response in Kwilu Subregion has helped to meet this increasing demand in recent years. Yet the Kwilu Subregion, which is one of the more densely populated agricultural zones in Zaire (41.2 people/square kilometer), is plagued by poorly maintained rural roads. This greatly increases marketing costs and isolates numerous zones of relatively high agricultural production potential. Moreover, the effect of Zaire's economic crisis upon the availability and cost of trucks, spare parts, fuel and agricultural marketing credit has clearly impeded the development of agricultural production and marketing in Kwilu Subregion in recent years.

In addition to serious infrastructural and economic problems, the soils in much of Bandundu Region are poor, uncontrolled brush burning and soil erosion have increased in recent years and the uneven, hilly terrain and innumerable tributaries of the Kwilu and Kasai Rivers complicate road construction and maintenance. Yet at the same time the agricultural population is dynamic, hard-working and highly responsive to economic incentives. USAID has already committed funds to upgrading several key roads in the region (Kikwit-Idiofa, Kasai-Bulungu, Bulungu-Kikwit, Bulungu-Panu, Kikwit-Mangai), as well as the port of Panu, Dubai-lubue, and Mangai. Further interventions to improve agricultural production and marketing would have obvious complementarities with the 026 and 028 projects and would build upon the upgraded infrastructure financed by these projects. Despite the important resource use and degradation issues that remain to be addressed, the Kwilu Subregion presents attractive possibilities for additional USAID assistance. The principal findings, conclusions and information gaps resulting from the April trip are discussed below.

Principal Constraints to Agricultural Marketing

Transport. The deterioration of the rural road network in Kwilu Subregion constitutes the most serious constraint to agricultural marketing. The Office des Routes (OR) is responsible for maintaining secondary roads, and it mechanically grades sections of roads once or twice a year. Yet it is

711

hand brigades on OR-supervised roads is unsatisfactory, as funding has been irregular and training and supervision of the cantonniers is inadequate. Drainage is poor or non-existent and the deplorable shape of the OR maintained roads contrast markedly with the generally satisfactory condition of roads maintained by private firms. Some of this private maintenance is self-financed. Some firms also obtain contracts for maintaining part of the OR network. Conseil Executif funds are channeled through the Department of Agriculture for maintenance of "routes de desserte agricole."

The poor condition of most of the rural roads network causes vehicles to depreciate more rapidly, lowers vehicle utilization rates, increases transport costs, and leaves certain potentially productive agricultural zones without assured access. Coupled with the country's crisis at the macroeconomic level, which has greatly restricted trader/transporter access to trucks, spare parts, fuel and marketing credit, the deteriorating state of the rural roads compounds difficulties in agricultural marketing.

Marketing Credit. Presently the BCZ office in Kikwit is the only source of formal credit for traders and transporters in the Kwilu Subregion. And BCZ only extends loans to the largest firms, which are able to provide collateral in the form of stores, warehouses, processing plants and vehicles. Moreover, BCZ credit represents a subsidy to the operations of large traders in that interest is only 2% per month for other loans. Small to medium size traders have limited access to this subsidized formal credit. If they are able to obtain any loans at all, it is usually in the form of informal credit which is extended for short periods by larger firms and traders and reflects the opportunity cost of capital. Most of the traders interviewed argued that the unavailability of credit restricts agricultural marketing by limiting access to trucks, spare parts, storage depots and working capital necessary for the financing of agricultural buying campaigns.

Storage. Most traders in the Kwilu Subregion own storage depots in rural buying areas, the larger towns (Kikwit, Idiofa, Bulungu) and sometimes at ONATRA ports. These depots are generally satisfactory for storing maize, unshelled peanuts, palm products, millet and paddy for limited periods of time. Larger firms operate agro-industrial processing units for milling rice and maize and transforming palm products. On-farm storage appears to pose serious problems for producers in less accessible areas, since the period between harvest and evacuation of the produce can often exceed six months. In some areas produce is evacuated every other year or not at all, which provides a grave disincentive to commercial agricultural production. On-farm storage is also a serious constraint in the wetter zones of Kwilu Subregion, particularly in the areas between the Kwilu and Kasai Rivers in Bulungu and Idiofa zones. Clearly, more applied research needs to be conducted to assess the economic significance of storage losses, particularly in production zones.

Sacks. Kwilu Subregion is an important producer of fiber that can be used in fabricating sacks for agricultural produce. Several of the firms in the region collect this fiber and send it to TISSAKIN in Kinshasa (the sole manufacturer of sacks in Zaire) in exchange for new sacks. While most of the larger companies in Zaire are able to acquire new sacks, small and medium scale traders typically employ used sacks that sometimes rip or collapse at the bottom when loaded with produce. It is also alleged that some reams of new sacks produced by TISSAKIN are defective, reflecting inadequate quality control. Sacks cost 16-20 Zaires each in Kwilu in April 1983.

Distribution of Seed. Seed degeneration and inadequate seed production and distribution networks are commonly cited as prime constraints to increasing commercial agricultural production in many areas of Zaire (North Shaba, North Kivu, Bumba zone, Kwilu Subregion). The Projet National Riz (PNR) produces rice seed for distribution to producers on about 12 hectares near Kikwit. The Developpement du Progres Populaire (DPP) also produces and distributes rice seed around Idiofa. These efforts are limited and underfunded, however, and the quality of Kwilu rice is poor, comparing unfavorably to imported rice, as well as costing more in Kinshasa than rice produced in Bumba. CODAIK is attempting to improve maize and cassava varieties, with the intent of distributing seed and cuttings to farmers. Variety trials are conducted at Djumba and there are seed multiplication sites at Kipuka and Mikwi (CAPSA). CODAIK is also collaborating with PRONAM in distributing manioc cuttings from more disease resistant varieties developed at the PRONAM station at Kiyaka (40 kilometers south of Kikwit). While efforts to upgrade seed production and distribution are underway, there is need for additional assistance.

Agricultural Tools. Some programs are underway to improve distribution of agricultural implements to farmers, but there is again room for improvement. The DPP in Idiofa obtains tools from Kinshasa for distribution to local merchants, who in turn sell the tools to farmers; particularly at rural canteens. Tools are also fabricated by village blacksmiths. Finally, CODAIK intends to improve distribution of agricultural implements.

Agricultural Extension. The agricultural extension service in Kwilu Subregion is poorly organized and supported and unable to offer improved packages to farmers. Extension agents are supposed to cultivate demonstration plots, but this rarely is done. Instead, the agents ensure that minimum requirements are met for food crops and impose fines for noncompliance. They also loosely monitor agricultural marketing in their areas. CODAIK will redesign and supervise extension in selected collectivities, providing extension agents with salary incentives and abandoning the imposed cultivation of crops. As CODAIK expands its programs beyond the initial pilot collectivities, it will coordinate the extension programs of the Department of Agriculture, the PNR, the DPP and other missionaries. As increased quantities of cassava cuttings and improved maize and rice seeds become available, CODAIK should be able to coordinate distribution of improved varieties to regional farmers.

Agricultural Pricing. 1983 is the first year in which the prices of agricultural commodities have been determined by the free play of supply and demand. Prices were liberalized in late May 1982 mid-way through the 1982 produce buying campaign. There is preliminary evidence that agricultural prices will increase by 50-100% in 1983 over 1982, as traders based in Kwilu and Kinshasa compete in buying produce and producers seek to protect their purchasing power. Rapid inflation in the prices of most consumer goods, particularly during the past six months, is compelling producers to demand higher farmgate prices. Yet there are allegations of monopsony buying and unfair practices in some production zones, particularly in the less accessible areas. While the unleashing of the forces of supply and demand will benefit many producers, there is scope for improved monitoring of buying prices and practices. National policies regarding importation of foodstuffs such as rice and maize will also have to be coordinated carefully with price liberalization.

Issues of Institutional Jurisdiction and Coordination

Unlike North Shaba Subregion or Bumba zone, where there are few development interventions, there are numerous donor agencies and missionary organizations active in Bandundu. The potential for increasing commercial production of food crops, the proximity of Kwilu to Kinshasa, and the pressing problems of infrastructural development and maintenance make it an attractive site for many development organizations. Yet the presence of other organizations does raise some jurisdictional boundary and coordination issues that will need to be addressed by USAID if it does elect to intervene further in Bandundu.

CODAIK (Compagnie pour le Developpement Agro-Pastoral Integre du Kwilu-Kwango)

It is the Department of Agriculture's policy that agricultural development interventions in Kwango-Kwilu be coordinated by CODAIK. CODAIK has begun to undertake a program of road maintenance, crop variety trials, and seed and agricultural tool distribution. Yet CODAIK's program to tackle the difficult problems that face Kwilu and Kwango Subregions is only a start. CODAIK is an institutional experiment that is attempting to coordinate the efforts of public and private sector within a single organization for development purposes. The objectives of the participants have not always been harmonious, as there are many divergent interests. USAID will need to work within the framework established by CODAIK if it intervenes in Kwilu Subregion. There is clearly scope for additional assistance and interventions, particularly in the area of road maintenance and rehabilitation. USAID presently enjoys a comparative advantage in infrastructure development, given its involvement in the 026 and 028 projects and experience obtained from the North Shaba Development Project. Nevertheless, intensifying USAID efforts in Kwilu will require coordination with CODAIK, donor agencies and private firms.

Office des Routes

Although USAID is presently collaborating with the OR in upgrading the Kikwit-Idiofa road, the OR's performance in assuring the maintenance of regional roads has been very poor in recent years. The OR's emphasis on mechanical grading without continuing the pre-Independence practice of hiring rural brigades has led to rapid deterioration of most OR maintained roads. In areas where private firms have obtained contracts from the OR to hire cantonniers, or where firms maintain rural roads at their own expense, maintenance is appreciably better.

If USAID becomes committed to rehabilitation of the rural roads network in Kwilu Subregion, it will have to explore alternative institutional arrangements to ensure that upgraded roads are adequately maintained. Private firms have demonstrated a commitment to road maintenance, because it is clearly in their interest to ensure access to major production zones and minimize transport costs, vehicle depreciation and down time. This contrasts with the OR's poor performance in road maintenance, its alleged sale of fuel and lubricants, and its misuse of funds allocated to brigades. USAID is therefore advised to work closely with the private sector in maintaining rural roads. More sub-contracting of OR funds to private firms or the establishment of an alternative mechanism for channeling road maintenance funds directly to

II. Field Trip to Kikwit

A. Estimated Shipments of Manioc from Bandundu to Kinshasa

While travelling from Kinshasa to Kikwit between 9:00 and 16:15 on April 5, the team saw some 15 trucks heading west toward Kinshasa. The vehicles were seven to twelve ton trucks, including MAN ex-military, Mercedes 9011, Toyota, Magirus Deutz, Leyland and Ford trucks. Assuming that two thirds of these vehicles were carrying an average of six tons of manioc to Kinshasa, and that another 5 trucks loaded with manioc travelled to Kinshasa that day while the team was not travelling on the Kikwit-Kinshasa road, it is probable that some 90 metric tons were transported to Kinshasa from Bandundu¹. If this represents average daily shipments of manioc toward Kinshasa, then 22,500 metric tons of manioc are trucked from Bandundu to Kinshasa per year.² Assuming the population of Kinshasa in 1983 is 3.0 million inhabitants, then Bandundu alone may supply Kinshasa with some 75 kilograms of manioc per resident per year.

This estimate is probably too high. Houyoux found that per capita manioc consumption in Kinshasa was 37-39 kilograms in two separate studies during the 1970's.³ Our crude estimate does not reflect seasonal variation in manioc marketing. Yet unlike other staple food crops in Zaire, manioc is planted, harvested and marketed throughout the year. At the very least Bandundu probably satisfies well over half of Kinshasa's demand for manioc, as estimated by the FAO.⁴

¹ The team returned to Kinshasa from Kikwit from 15:00 and 22:00 on April 12 and passed numerous vehicles headed toward Kinshasa.

² It is assumed that manioc is shipped from Bandundu to Kinshasa 250 days per year, reflecting 50 weeks of 5 days each.

³ Reported in Commercialisation des Produits Agricoles du Nord-Est du Zaire Societe de Developpement International Desjardins, Septembre 1981.

⁴ Louise Fresco, Le Milieu Rural et son Developpement au Kwilu, FAO, Juin 1981

75

B. Retail Price Trends for the Town of Kikwit

Throughout its field research in Zaire the SPMA team heard from many quarters that the price increases for consumer goods have outstripped increases in the prices of agricultural produce, particularly basic foodstuffs during the last few years. The INS office in Kikwit records the prices for a wide range of goods and commodities each month and calculates price indices for basic commodity groups, as shown in Table KW-1. Over the period February-December 1982, the retail price data show that retail prices for consumer goods rose 44.6% while food prices increased by only 15.1%. The cost of lodging rose 42.5%, clothing prices only 13.2%, while a basket of miscellaneous consumer goods increased by 69.1% in the town of Kikwit. The overall price index rose 24.6% during the eleven month period. The retail prices for selected individual commodities and goods are shown in Table KW-2.

While it is important to remember that INS price data are for retail prices in an urban area, there is little doubt that they reflect the trends in prices for basic commodity groups in both urban and rural areas of Kwilu Subregion. Rural households are paying much more for basic consumer goods now than they were a year or 15 months ago. Although we were unable to obtain retail price data for the first three months of 1983, there is some evidence that retail prices increased far more rapidly in the October 1982-April 1983 period than during the February-December 1982 period. This is probably the main impetus behind agricultural producers' attempt to increase farmgate offer prices during the 1983 buying campaigns.

In selling his produce, the agriculturalist is no doubt trying to maintain his purchasing power and standard of living. While rural households' needs for consumer goods are not extravagant, they do require regular purchases of commodities such as salt, petrol, fish, cloth, sandals and other items of clothing, soap, and notebooks for school children. The farmgate prices for the basic foodcrops (manioc, maize, peanuts, rich, palm products) have been allowed to be determined by the forces of supply and demand since the price liberalization of May 1982. While the range of farmgate prices in the Kwilu Subregion has not yet been clearly established (see Table KW-3), it is possible that the terms of trade facing agriculturalists will continue to erode. Under this scenario growers would be able to maintain their standard of living by increased marketing of agricultural produce. If production increases did not accompany greater sales, then nutritional levels would decline in rural households.

It will be important to monitor monthly changes in the prices of basic agricultural commodities in 1983, since this will be the first agricultural buying campaign with free and competitive pricing. These prices could be collected at the farmgate in various agricultural zones, at key assembly points (Idiofa, Kikwit and Bulungu) and in Kinshasa, the final destination for a large proportion of the produce marketed in Kwilu Subregion.¹ These prices could be compared with retail prices for key consumer goods, which are already being collected by INS in Kikwit and Kinshasa. In the absence of price restrictions, agricultural producers may be better able to protect their purchasing power this year than in past years. Even if they are not able to do so, the price collection and analysis exercise would allow monitoring of agricultural pricing practices in several rural areas. In this way, the prevalence of monopsony pricing and unfair practices could be ascertained, particularly in more isolated areas not served by a large number of buyers.

TABLE 104-1

Retail Price Indices for Urban Households in Kikwit, February-December 1982

	General Index	Food	Other Consumer Goods	Cereals	Starch	Legumes	Fruits	Fish	Meat & Poultry	Oil	Lodging	Clothing	Others
February	1509	1619	1319	924	950	1056	948	1306	3204	2021	1523	1515	1067
March	1523	1511	1544	884	738	1074	1012	1094	2973	1941	2149	1513	1124
April	1453	1452	1453	947	602	937	1004	1231	2864	1883	1824	1472	1176
May	1416	1383	1473	813	538	801	884	1073	2862	2016	1817	1452	1236
June	1518	1526	1505	895	598	1124	1071	1349	3246	1851	1868	1462	1265
July	1661	1697	1597	882	547	1474	1021	1485	3675	2001	2194	1508	1197
August	1773	1841	1518	1090	714	997	1429	1500	3950	1640	1361	1490	1212
September	1611	1620	1599	1100	803	1060	1360	1525	3125	1771	2275	1526	1333
October	1704	1713	1687	1271	1206	1275	1317	1524	2746	2098	2068	1697	1422
November	1848	1853	1839	1182	1508	1156	1431	1617	2948	2043	2282	1678	1668
December	1880	1865	1907	1366	986	1279	1248	1765	3207	2352	2171	1715	1804

Source: Institut National de la Statistique (I.N.S.), Direction Regionale de Bandundu, Prix et Indices des Prix a la Consommation Familiale, Bulletins Mensuels, 1982.

NOTE: The indices are calculated using 1976 prices as the base, where 1976 = 100

TABLE RM-2

Retail Prices of Selected Agricultural Commodities and Consumer Goods at Markets
in the Town of Kibwit, February-December, 1982

	Local Rice (glass)	Maize Kernels (glass)	Manioc Cassettes (kg.)	Salted Fish (kg.)	Beef w/o Bones (kg.)	Bananas (pile)	Shelled Peanuts (2 tins)	Tin of Sardines (125 gr.)	Kerosene Lamp (Dety)	Pair of Sandals (plastic)	Note- book (18 pg.)	Toiletry Soap (bar)
February	6.66	2.27	2.08	46.74	26.99	3.38	12.33	4.88	66.5	67.5	2.0	3.5
March	7.70	-	2.38	36.01	33.01	3.53	13.45	4.70	68.0	65.0	2.2	3.5
April	7.54	2.70	1.74	37.89	32.17	3.23	11.52	4.58	69.1	55.0	3.1	3.8
May	7.10	1.61	1.87	45.56	26.12	3.08	9.00	4.70	71.5	56.3	3.4	3.5
June	7.10	1.37	2.05	52.37	36.61	3.30	8.16	4.88	71.5	55.0	3.3	3.5
July	6.72	-	1.78	55.87	30.50	3.85	8.67	5.00	75.0	52.5	3.0	3.5
August	7.57	4.23	1.88	69.27	31.82	3.89	9.85	5.88	60.6	58.8	3.4	3.5
September	7.17	2.55	1.70	57.81	27.73	4.08	11.49	6.00	52.5	62.5	3.8	3.5
October	7.27	2.96	2.56	58.60	31.55	3.54	17.18	6.25	68.5	60.0	3.1	3.5
November	7.55	3.09	3.00	70.85	40.19	3.82	14.17	6.38	67.3	55.0	2.8	3.6
December	9.51	3.08	2.29	61.83	36.94	4.19	17.80	6.50	69.0	57.5	3.1	4.0

Source: Institut National de la Statistique (I.N.S.), Direction Regionale de Bandundu, Prix et Indices des Prix a la Consommation Familiale,
Bulletin Mensuels, 1982

C. CODAIK
(Compagnie de Developpement Agro-pastoral Integre du Kwango-Kwilu)

CODAIK was created in 1982 with the participation and funding of the Executive Council of the GOZ, the World Bank, German cooperation, and thirty firms and individuals in the Kwango-Kwilu region. The shareholders are listed in Table KW-3. Each contributed 50,000 Zaires to CODAIK's pool of working capital when CODAIK was established. Initially, the IDA has loaned the GOZ \$2.9 million, the German cooperation has granted \$1.0 million to CODAIK, and the Executive Council is committed to provide \$2.0 million (or 11,560,000 Zaires at the official exchange rate).

CODAIK is intended to serve as the umbrella organization for development interventions in Kwilu and Kwango subregions. The project's zone of intervention is defined as the zones of Idiofa, Bulungu, Masi-Manimba, Gungu and Feshi. The field personnel of the Department of Agriculture, Rural Development and Environment are supervised by CODAIK in the pilot collectivities in Feshi and Bulungu under CODAIK's technical supervision. In addition, a Belgian integrated rural development project, which is slated to begin in mid-1983 in the Gungu zone of Kwango subregion, may be implemented in coordination with CODAIK's activities. CODAIK has experienced some difficulties in recruiting long-term expatriate personnel but should have a full team in place (in Kikwit) by the end of 1983.

1. CODAIK's Plan of Implementation

CODAIK envisages a two-phase program of implementation, although continuation of the project after the first phase will depend on approval by the GOZ and donor agencies. During the first phase (1982-84) applied research will be conducted on agricultural production and extension, input and product marketing and marketing infrastructure. This research will focus on identifying constraints and proposing interventions to alleviate these constraints. During the second phase of the project (1984-87), CODAIK intends to undertake a broad program of interventions. If the second phase were implemented, it would distribute improved seeds and vegetative material, agricultural tools and veterinary inputs to regional producers, hopefully through producer and herder associations. Conservation and reforestation programs would seek to engage private firms and missionaries in the regular upkeep of some 2500 kilometers of secondary roads, which would complement the efforts of the Office des Routes to maintain national roads. Finally, interventions to improve product marketing would include monitoring of agricultural prices, the organization and streamlining of marketplaces and marketing channels, and investment in grain silos, slaughter slabs and agro-industries. Both agricultural production and marketing credit would be extended to regional farmers, herders, traders and processors.

2. Present Marketing Activities

CODAIK is presently involved in three types of agricultural marketing activities. The first is distribution of agro-pastoral inputs, such as improved seeds (particularly maize), vegetative material (manioc cuttings), veterinary inputs, and agricultural implements. CODAIK has acquired five seven ton General Motors trucks for its shareholders. While five vehicles

TABLE KH-3

List of Shareholders, COOAIK

<u>ZONE</u>	<u>CITOYEN</u>
Bulungu	KIBARI KIFUMBI EYUM MAFUTAMINGI
Gungu	LETA A. MUTUNDA Ets. MBEMBO
Idiofa	Ets. MPALA SANGA SAM ELE
Masi-Manimba	H.P.K. KWAKENDA RELAIS-MWINDA SIEFAC NZAMBA
Fashi	MULOPO MUPELA et MALAMBA
City of Kikwit	KIMBONDJA BUSANGA MAISTRIAU MULENGAMUNGU ZUY KUZUNZA Ste A.M.S.
Religious Organizations	DIOCESE DE KIKWIT Cie. DE JESUS DIOCESE D'IDIOFA
Others	IDZUMWIR IFITSU MAFEMA Me KAMANDA wa KAMANDA Rep. DU ZAIRE

ify regional needs for vehicles (numbers and types of trucks), determine distribution arrangements and import trucks which meet the required specifications. While GM trucks have been purchased for five of the shareholders to date, they are probably not the best vehicles adapted to the often poorly maintained roads of Kwango-Kwilu.

A third intervention related to marketing is the maintenance of rural roads, as well as ferries at water crossings. The Kwilu subregion is interlaced with low-lying valleys, streams and rivers, and the rehabilitation of bridges and ferries is critical to any expansion in marketing. CODAIK will work closely with the thirty shareholders and regional organizations (such as missionaries), whose marketing activities require maintenance of rural roads, bridges and ferries. It will supervise the use of funds provided by the Conseil Exocutif for the maintenance of approximately 2500 kilometers of rural roads in the five zones where it is intervening. Table KW-4 summarizes the CODAIK maintenance plan by zone. While several of the shareholders in CODAIK presently hold contracts with the Office des Routes, which provide 1100 Zaires/kilometer/year for manual road maintenance by rural brigades, the other shareholders will obtain access to road maintenance funds provided by the Department of Agriculture. The OR funds provided to contractors are barely adequate, so the funding controlled by CODAIK is a greatly needed supplement. Although many private traders repair bridges and deteriorated sections of road on an ad hoc basis, the CODAIK program will hopefully ensure more regular maintenance and repair.

3. Proposed Studies

CODAIK is presently recruiting three consultants for short-term studies of agricultural marketing, rural credit and livestock development in Kwilu-Kwango. The studies should be completed by the end of 1983. The three consultants will analyze the current agricultural marketing, rural credit and livestock production and marketing situation in Kwilu-Kwango. They will identify constraints and propose a program of interventions to address these constraints. They will then develop a realistic and feasible program for CODAIK to undertake.

An agricultural economist will survey of production and marketing of food crops, particularly manioc, maize and peanuts, livestock and fish, as well as the collection and marketing of caterpillars and grasshoppers. He will assess the magnitude and direction of commodity flows, identify marketing constraints, including infrastructural ones, and propose a program of interventions to be undertaken by CODAIK. He will also assess the existing mechanisms for the distribution of inputs such as veterinary products, mineral supplements for livestock, and agricultural tools, as well as identify constraints to improved distribution.

The credit consultant will design a program that extends modest loans to producers for the purchase of implements and other agricultural inputs, as well as short and medium term credit to traders for the buying of agricultural commodities, tracks and spare parts. The possibilities for extending credit to producer cooperatives, missionary organizations, herder groups and small-scale enterprises will also be examined.

TABLE KM-4

Summary of CODAIK's Proposed Road, Bridge
and Ferry Maintenance Program

<u>ZONE</u>	<u>ROADS (km.)</u>	<u>BRIDGES</u>	<u>FERRIES</u>
Bulungu	538	4	4
Masi-Manimba	568	10	5
Idiofa	545	4	2
Gungu	516	4	2
Feshi	<u>351</u>	<u>4</u>	<u>-</u>
TOTAL	2,518	26	13

These consultancies will improve our knowledge and understanding of constraints and opportunities in agricultural production and marketing. They will complement information obtained on household consumption and nutrition in the CEPLANUT survey of nutrition in Bandundu, which was carried out in April-May 1983. The CODAIK consultancies and the CEPLANUT survey data, along with the studies undertaken by Frasco (FAO, 1981) and Reid (USAID, 1982), will provide CODAIK, the GOZ, USAID and other donors with an adequate baseline against which the impact of development interventions can be effectively monitored.

4. The Need to Coordinate USAID Interventions with CODAIK Programs

USAID will have difficulty intervening in agricultural marketing or in an area development project in Kwilu Subregion unless it is willing to work within the framework established by CODAIK. This institution, which has the support of the Executive Council and the Department of Agriculture, will take the lead in designing and implementing development interventions in Kwilu-Kwango. USAID can continue to complement CODAIK in Kwilu, particularly in the areas of nutrition and road rehabilitation, as CODAIK's means are not sufficient to cover the pressing needs of the region. There is greater scope for further rehabilitation of roads, bridges, and ferries, as well as the construction (and regular maintenance) of feeder roads into untapped areas. Improved access to rural producing areas will accelerate evacuation of agricultural produce toward Kinshasa (and secondary centers), which will clearly improve the food supply situation in urban areas. Greater commercialization may affect calorie intake, the mix of food crops consumed, and nutritional well-being in rural areas. Any USAID interventions in Kwilu Subregion should be carefully monitored so as to determine their impact on rural households' food consumption patterns, nutritional levels, expenditures on food and consumer goods, and overall standard of living.

D. Private Firms Interviewed in Kikwit

1. Etablissements Kimbondja

Cit. Kimbondja is one of the larger buyers of agricultural commodities in Kwilu Subregion. He purchases rice, peanuts, millet and maize for resale in Kikwit and shipment to Kinshasa. He reports sending 60-70% of the rice he mills to Kinshasa, as well as over 90% of the unshelled peanuts, about 50% of the millet and nearly all of the maize that he buys. He has several buying counters, canteens and storage depots in rural areas around Kikwit, in addition to a rice mill and general store in Kikwit.

Kimbondja is a shareholder of CODAIK and commented extensively on its organization and planned interventions. He reported that there is presently a good deal of tension between the government and donor agencies supporting CODAIK and the thirty private shareholders. While the private firms had hoped that most of CODAIK's activities would generate profits and strengthen the financial position of the organization, the GOZ and donor agencies prefer to emphasize rural development interventions that will directly improve the welfare of the agricultural population. He conceded that CODAIK's plans to repair roads and bridges and distribute trucks to shareholders would benefit the private firms (as well as the rural population). He expressed some disappointment with the slow start-up for the organization and was somewhat uncertain as to the long-run financial viability of CODAIK.

As with several other large firms in Kikwit, Kimbondja has a contract with the Office des Routes to maintain nearly 400 kilometers of rural roads. The maintenance is carried out by rural brigades. Bridges are repaired when necessary and the OR reimburses Kimbondja (and other contractors) for major repairs.

Cit. Kimbondja expressed concern over his declining ability to compete in the Kinshasa market when imports of rice and maize arrive. He stated that he is presently able to sell Kwilu rice in Kinshasa for about the same price as rice imported from Thailand but that the Kwilu rice is usually inferior in quality. If the quality differential is significant, then the rice market in Kinshasa is probably segmented so that Kwilu rice can only be sold when the higher quality imported rice clears the market. Kimbondja would prefer that the GOZ restrict rice imports so as to allow internal rice suppliers in Kwilu and Bumba to compete. He also noted that the rise in the farmgate for paddy price from 1.5-2.0 Zaires/kilogram in 1982 to 2.5-3.0 Zaires/kilogram in 1983 threatened to reduce traders' incentives to mill paddy and sell the rice in Kinshasa. The evolution of paddy and milled rice prices in Kikwit and Kinshasa will be important to monitor during the next few years, particularly in relation to the quantities and prices of imported rice.

2. Etablissements Oliviera

Created in 1948, Ets. Oliviera is another important buyer of agricultural produce around Kikwit. In 1982, the firm bought 158,662 kilograms of paddy, 1890 sacks (32-33 kilograms each) of unshelled peanuts, 70,750 kilograms of maize, 3300 kilograms of millet and 29,400 kilograms of manioc cossates. Oliviera hopes to increase its purchases of paddy (250,000 kilograms) and maize (100,000 kilograms) in 1983 and has applied to the BCZ for a loan of 860,000 Zaires for the 1983 agricultural buying campaign. The firm has generally had difficulty obtaining bank credit in the past. Oliviera also operates a palm oil processing plant, which produces some 100-130 200 liter drums of palm oil each month. Most of the firm's sales are to retailers and wholesalers in Kikwit and to truckers from Kinshasa.

Ets. Oliviera owns and operates two seven ton Mercedes trucks, two seven ton Toyota vehicles, and one tractor. The firm buys agricultural produce, operates 12 canteens, and occasionally repairs bridges in its three marketing zones. Two of its assembly areas are collectivities in the Idiofa zone (Lokwa and Kanga), while a third is located in Gungu zone (Lukamba). Oliviera distributes some rice seed produced by the PNR in Kikwit to farmers in its marketing areas, as well as cutting implements to palm cutters.

Oliviera reported that increasing competition for agricultural produce in Kwilu subregion has caused farmgate prices to rise significantly during the last two marketing campaigns. Much of this increased competition results from increased assembly of agricultural commodities by Kinshasa based traders, who are often women. The farmgate prices have risen by 50-100% between 1982 and 1983 for the principal commodities in the Kikwit-Idiofa area, as shown in Table KW-5.

3. Mr. Maistriau, Cattle Raiser and Trader

Maistriau has lived in Kikwit for 30 years and is the largest cattle producer in Kwilu-Kwango, owning somewhere between 2000 and 5000 head of Ndama and Ndama-Zebu crossbred cattle. His cattle are grazed mainly around Feshi, where he has experimented with improved pastures (exotic grasses), implantation of wind breaks, and cattle cross-breeding. He purchases veterinary inputs and mineral/salt licks for his animals. He also castrates some bulls but is not convinced castration leads to superior growth performance. Maistriau argues that unless bulls are castrated at a very young age, the shock of castration retards the growth of steers. Maistriau sells one to two truckloads of cattle per month to butchers and wholesale cattle traders from Kinshasa. These animals are typically three year old males and steers. Fifteen to sixteen head can be trucked at one time. The animals are not weighed prior to sale but sold according to their size and age. Each head fetches 5000-6000 Zaires or approximately 25 Zaires per kilogram liveweight. Several missionary organizations and large scale cattle producers also sell cattle to Kinshasa buyers but not as regularly or in such large numbers as Maistriau. The cattle enterprises in Kwilu and Kwango subregions are principally beef and not dairy enterprises. The increasing development of dairy production taking place in North Kivu has not begun to take hold in Bandundu. This is due to the distance of the Kwilu-Kwango grazing areas from Kinshasa, the principal potential market for dairy products, and the lack of a cold chain of processing and transport facilities for ensuring evacuation of dairy products to Kinshasa with minimal spoilage.

Small-scale cattle producers do not often sell their stock preferring to hold it as an inflation-proof store of wealth. This is undergoing change, however, as the region becomes increasingly commercialized. Rural households frequently sell small ruminants in southern Kwilu and in Kwango in order to obtain cash. Maistriau claims that producers are sometimes pressured to sell reproductive and young stock when their cash needs are greatest. Buyers are typically local butchers who slaughter the small stock at rural markets. The principal problems with small stock raising are crop damage, theft, the lack of mineral supplements and disease. Uncontrolled bush burning in savannah regions areas is also a problem that plagues all types of livestock raising. Occasionally goats are sold to traders who load small lots on trucks headed for Kinshasa. Goats are typically sold for 350-450 Zaires in the Kikwit-Feshi zones.

In addition to raising livestock, Maistriau buys agricultural commodities in Kwilu subregion. He commented extensively on the marketing of principal crops during the 1970-1983 period. From 1970 through 1981 he reflected that government imposed regulations on agricultural marketing and pricing depressed agricultural production. When price controls were relaxed in 1982, the supply of marketed produce increased in 1982-83. Farmgate prices for most foodstuffs have risen dramatically, as producers have sought to protect their purchasing power (in light of rapid price increases in consumer

TABLE KW-5

Evolution of Prices for Principal Agricultural Commodities
in the Kwilu Subregion, 1980-1983
(in Zaires/Kilogram)

	Maize ^a	Paddy ^b	Peanuts ^b	Manioc ^b	Palm Oil
1980	0.6	0.6-1.25	1.2-1.5	0.6	n.a.
1981	0.6	1.0	n.a.	n.a.	650
1982	0.8-1.0	1.3-2.0	1.7-2.1	1.3-1.7	750-900
1983	1.2-1.5	1.5-3.0	2.4-4.5(?)	2.0	1100-1500(?)

Sources: Interviews with traders at Kikwit and Bulungu (1981-1983)

Republique du Zaïre, Département de l'Agriculture, Développement Rural et Environnement, Projet no. 4.505.033.55.34, Etude d'Identification et Dossier de Prefaisabilité du Développement Agricole et Socio-Economique du Zaïre Occidental en Vue de Ravitailler les Centres Urbains, Etude Financée par le Fonds Européen de Développement, Rapport Final, Décembre 1982. (1980)

- Notes:
- a The maize price represents the wholesale price in Kikwit.
 - b The prices for paddy, peanuts and manioc are farmgate prices.
 - c The lower end of the price ranges have already been paid in the first three and one-half months of 1983. The upper end of the price ranges are tentative guesstimates based upon the informed judgements of traders in Kwilu Subregion. The 1983 buying campaign opened on April 1 for maize, paddy and peanuts.

General Note of Caution:

These prices are broadly representative of recent trends in agricultural prices during the past four years. In particular localities at particular times prices may have been different from those listed. However, these estimates can be interpreted as representative ranges.

goods) and as competition for produce, particularly from Kinshasa buyers, has increased in recent years.

In discussing the problems in marketing of agricultural commodities, Maistriau stated that there are too few and infrequent buyers for maize. The most reliable clients, breweries in Kinshasa, are only willing to offer mediocre prices to assemblers based in Kwilu (1.5 Zaires/kilogram in 1983). Given the low offer prices in 1983, Maistriau forecasts poor production in 1983-84. Market opportunities for Bandundu rice in Kinshasa are also uncertain, primarily because the low quality rice from Kwilu cannot compete against lower priced rice from Bumba and higher quality imported rice. Maistriau feels that the Kinshasa market for rice is relatively saturated at this point. Marketing of peanuts also presents difficulties in that the gross margin between the fargate and Kinshasa prices is not high enough for traders to make satisfactory profits. Virtually all of the peanuts shipped to Kinshasa are unshelled, even though the oil from Kwilu peanuts is reputed to be of very high quality. Mr. Mikhailis, the representative of Compagnie Africaine Cooreman in Mangai, claims that peanut oil yields from peanuts grown in Kwilu are 60-65%, which are exceptionally good. Maistriau claims that it is not profitable, however, to export peanut oil at the official exchange rate, which greatly inflates the FOB price relative to the shadow (or real economic) price.

Finally, Maistriau maintains 923 kilometers of rural roads under contract to the Office des Routes. He subcontracts out about 200 kilometers of these roads to private firms. Most of roads maintained under contract are found in savannah areas and are easier to maintain than roads in forested areas, particularly between the Kwilu and Kasai Rivers. Maistriau claims that the 1100 Zaires/kilometer/year funding provided by the OR barely permits him to buy hand tools and pay cantonniers, but that it is in his interest to obtain the contract in order to prolong life of his vehicles and lower transport costs. He argues that the OR funds are inadequate, especially when compared with the real value of funds for paying cantonniers before 1970.

4. Ets. Madail

Ets. Madail is one of the more important buyers and processors of palm products and maize in Kikwit. It operates three palm oil processing plants in Ritomba, Luchina and Obala and sells most of its palm products to traders from the Kasais and Lumbumbashi. The palm oil is evacuated by ONATRA barge to Ilebo and then by rail to the final markets. Little palm oil is shipped to Kinshasa. Madail also buys maize for shipment to the Kasais and Shaba (roughly 50%) and to breweries and livestock producing firms in Kinshasa (the other 50%). All of the maize is evacuated by ONATRA barge from Kikwit and Panu. In 1982 Madail shipped some 7500 tons of maize to all markets, losing about 525 tons (or 7%) to theft.

5. Ets. Busangalu (Cit. Busanga)

Cit. Busanga is one of the larger assemblers of foodstuffs in the area around Kikwit, as well as a shareholder of CODAIK.

Unfortunately, he was supervising buying of agricultural produce at the beginning of the agricultural buying campaign, so we were unable to interview him. Nonetheless, we did have an opportunity to interview an accountant with the firm.

Ets. Busangalu owns and operates ten trucks, more than half of which are dispatched to rural buying zones, while the others haul produce and goods between Kikwit and Kinshasa. The firm has about 20 canteens in rural areas (mostly in the collectivity of Niadi-Nkara) and storage depots at most of these locations. Cit. Busanga sells most of the manioc he buys in rural areas to other traders in Kikwit, as shown in Table KW-6. The remainder is shipped by the firm to Kinshasa for resale. If the firm buys the same volume of manioc as purchased in the first quarter of 1983 during the remaining three quarters, then it will buy some 35,500 sacks of manioc during the year, or 2100-2300 metric tons per year. Cit. Busanga also buys rice, maize, peanuts and squash seeds from farmers near Kikwit.

TABLE KW-6

Monthly Shipments of Manioc to Kinshasa by Ste. Busangalu,
First Quarter, 1983
(in units of 60-65 Kilogram sacks)

	<u>January</u>	<u>February</u>	<u>March</u>
Total Purchases	1741	3720	3433
Shipments by Ste. Busangalu to Kinshasa	1080	1503	1350
% Total	62%	40%	39%
Resale of Manioc in Kikwit to Other Firms for Shipment to Kinshasa	661	2216	2078
% Total	38%	60%	61%

Source: Ste. Busangalu, Kinshasa

III. Field Trip to Idiofa

A. Agricultural Marketing in the Idiofa Zone

Idiofa is a highly active agricultural marketing center in the Bandundu region. The President of ANEZA in Idiofa, Cit. Kalvanda, estimated that an average of 150 trucks a day pass through Idiofa, primarily from Kinshasa, Kikwit, Tshikapa, and Kananga. Very little produce is sold wholesale in Idiofa. Rather, traders and transporters based in Kinshasa, Idiofa, Kikwit or the Kasais, go directly to the villages to buy produce, which they process before transporting it to Kinshasa. Many buyers have their own trucks, but some, mostly women, come from Kinshasa and rent trucks to go into the villages. Transporters charge 5-10 Zaires per sack for the use of their trucks.

The market structure for agricultural products around Idiofa is fairly competitive. There is a large number of independent buyers and sellers, and relatively few barriers to entry. The principal agricultural commodities produced in the area are peanuts, corn, rice, manioc, coffee, palm oil, millet, soya, and beans. Livestock include chickens, goats, sheep, pigs, and some cattle. Most of the animals are consumed locally. Butchers come from Kinshasa to buy cattle. Manioc and palm nuts are harvested all year round. Corn, rice, and peanuts are seasonal crops, and the buying season runs from April through July, with some sales extending into September. Most of the manioc is sold and consumed locally, while the other products, once processed, are shipped to Kinshasa or the Kasais for sale. Coffee is primarily exported to earn foreign exchange, but the permits required to export coffee are limited to a few influential traders.

According to Cit. Kalvanda, food crop production in the Idiofa zone has increased steadily each year. Palm oil production has fallen, however, as the cultivation of crops such as manioc, rice, and corn is easier and more profitable than palm nut cuttings. The main marketing constraint encountered in Idiofa is transportation. All the roads within the Idiofa zone, as well as those connecting it to other towns, are unpaved and in varying states of disrepair. There is allegedly little, if any, maintenance by the Office des Routes or the collectivities. Not only are many production areas not serviced as often as they could be, but some potential agricultural marketing areas remain inaccessible. Because of the road conditions, which are aggravated by rainfall, the lifespan of vehicles is one to three years. Only the largest companies are able to finance new vehicles. Spare parts are costly and difficult to find locally. The few merchants with foreign exchange are able to import parts. Diesel is also difficult to obtain, since Idiofa is allotted only a small proportion of the already insufficient quantity of fuel that Kikwit receives. A few traders ship in fuel from Kinshasa. CCB (Compagnie Commerciale de Bandundu) brings fuel by barge to their ports, where it is then shipped to buying zones in Idiofa by truck.

Other major marketing constraints include limited access to credit and financing, inadequate storage, and high agricultural prices facing traders.

B. Principal Buyers of Agricultural Produce

1. DPP: Developpement Progres Populaire (Pere Jean-Marie Ribaucourt)

DPP, a Catholic development institution, owns and operates the largest agro-industrial complex in Idiofa. It promotes agricultural production and marketing around Idiofa. Its interventions are designed to benefit farmers rather than traders.

According to the DPP, the greatest constraint to marketing of agricultural products at the village level is the lack of storage and processing facilities. Inadequate storage leaves the farmer vulnerable to fluctuations in produce evacuation. Villages could increase the quantity of produce transported out of the village at one time if they owned and operated processing facilities. DPP also sees a need for more canteens in the villages to provide consumer goods at reasonable prices. DPP operates a few canteens, but it is concerned that most canteens are operated by a few traders who charge very high prices.

DPP believes that the principal marketing constraint is the deplorable condition of roads, which results in the rapid deterioration of vehicles. DPP maintains an extensive network of roads, and has contracts with USAID and Office des Routes to build bridges. Another constraint is the problem of obtaining timely credit for the seasonal buying campaign. DPP hopes to obtain 3-4 million Zaires to finance this year's agricultural purchases. Two and one half million Zaires are expected to come from the BCZ, affiliated Catholic groups and coffee sales.

Marketing difficulties also vary by crop. Manioc has a very high turnover rate, so working capital can quickly be recovered, whereas rice is more difficult to market because of the high cost involved in the preparation and storage. Maize is also often stored for long periods awaiting evacuation by barge, which slows capital rotation.

Price liberalization has permitted food crop prices to rise rapidly since 1982. For example, the price of rice paddy at the farmgate has risen from 1,40Z/kg in 1982 to 2,50Z/kg so far in 1983. There are no supply contracts between villagers and buyers; farmers sell to the highest bidder regardless of whether these transactions include other benefits to the villages, such as canteen supplies. Although food crop traders have been initially squeezed by the price increases, the marketing system is clearly in transition. The effect of increased farmgate prices on traders' ability to compete in Kwango-Kwilu will depend upon demand for foodstuffs in Kinshasa, the quantity, quality and price of foods supplied by other regions (e.g., rice from Bumba), and the volume of food imports. The evolution of the Kinshasa market for foodstuffs needs to be monitored.

2. CCB: Compagnie Commerciale du Bandundu (Mr. Martinage, Manager)

CCB is the other large agro-industrial installation in Idiofa. It is

linkages with villages where they buy produce. They supply six canteens with consumer goods, which are often used as a form of payment for agricultural produce.

CCB processes palm oil, rice and coffee and buys and sells unprocessed corn, manioc, and fiber. Its primary operation is palm oil processing, but one of its four palm oil factories is closed and the rest are operating at 60 percent capacity. Although the CCB supplies tools and consumer goods to palm cutters, the cutters are turning increasingly to cultivation of food crops. Because of this situation, CCB has increased its processing of other agricultural commodities. CCB bought 120 tons of rice paddy in 1981, 150 tons in 1982 and plans to buy 200 tons in 1983. Ten percent of the milled rice is sold in Idiofa, 50 percent is sent to Kinshasa for sale and consumption by CCB affiliates, and the rest is distributed to workers in the palm oil factories. Corn purchases have also risen and CCB plans to process 1200 tons of corn in 1983. In 1982, they only bought 450 tons due to lack of funds during the buying campaign. Coffee is exported to earn foreign exchange. Fiber costs 2,20 Z/kg at the farmgate and is bought to produce sacks for CCB use. The fiber is sent to Tisakin where CCB receives 10,000-20,000 sacks in exchange for 50 tons of fiber. Manioc is bought for consumption by CCB workers and 100 sacks are shipped to CCB affiliates in Kinshasa. The price of manioc at the farmgate is 60-90 Z/sack/kg while in Kinshasa it sells for 250-300 Z/sack. Fiber, palm oil and some corn are evacuated by barge; rice, corn, coffee and manioc are trucked to Kinshasa at the cost of about 150 Z/sack. CCB sends one or two trucks a month to Kinshasa with agricultural produce.

Credit is CCB's greatest marketing constraint. Credit is necessary for the buying campaign, but unless there are fixed contracts with final buyers, it is difficult to obtain credit even when the storerooms are full.

In maintaining 450 kilometers of roads, CCB receives no support from the Office des Routes. It employs one cantonier per kilometer. CCB would like to see passable roads developed to the ports, so commodities can be evacuated by barge. They have a few private ports with storage facilities, serviced by their own barges which transfer produce to ONATRA barges headed to Kinshasa at ONATRA ports.

3. Ets. Bitshi (Cit. Mukulu, Manager)

Ets. Bitshi buys manioc, peanuts, paddy, coffee, and corn. The manioc and some peanuts are sold in Idiofa. Rice, corn, and the rest of the peanuts are sold in Kinshasa. Bitshi has a problem in finding wholesalers in Kinshasa willing to take its produce. Because of this, corn is sometimes lost while peanuts are simply sold retail in Kinshasa. Bitshi sells coffee only when it can obtain an export license.

In 1982, Ets. Bitshi bought 688 tons of manioc and 120,000 tons of paddy. This year they will probably buy less rice because of insufficient funds. Price liberalization caused the price per unit of produce to be bid up. Credit is also very difficult to obtain for individual merchants. In 1982, Bitshi was able to obtain sufficient credit for the buying campaign, but in 1983, the loan of 300,000 Zaires will not be enough.

The other main marketing constraints for Bitshi are transport related. Like most smaller traders with only 4-5 trucks, Bitshi does not maintain any

the cantonniers who are assigned one or two kms. of road are not always paid. Cit. Mukulu suggested that funds be provided to private firms for road maintenance, who would then pay the cantonniers directly.

The problem of vehicles is a recurring theme among traders. One of Bitshi's four trucks is out of order, representing a substantial reduction in their ability to evacuate agricultural produce. Spare parts are difficult to obtain, especially for their Toyotas and Magirus trucks. Trucks are expected to last only about three years, due to the heavy use of trucks and the poor condition of t'a roads.

Access to fuel is another transport related constraint. Diesel is supplied to Idiofa from Kikwit, but the quantity received is insufficient for regional needs. The official price of diesel is 682 Z/Barrel (200 liters), but the blackmarket rate ranges from 800 to 1500 Z/barrel. The ports of Mangai and Dibaya-lubua have storage facilities, but lack fuel.

4. Ets. Mboliaka (Mr. Francisco, Manager)

Ets. Mboliaka is a better financed firm than most other firms in Idiofa. There are several Mboliaka branches in the Bandundu region and Equateur, which work closely together. Mboliaka has four trucks based in Idiofa, but the five trucks in Kikwit are also used in Idiofa.

Ets. Mboliaka deals mainly in rice, peanuts, corn, and manioc. This year it plans to buy 18,000 sacks of paddy at 2,5 Z/kg. The resulting 10,000 sacks of hulled rice will all be sent to Kinshasa. Mboliaka buys 3,000-4,000 sacks of unshelled peanuts annually, and sells them in Idiofa and Kikwit. Manioc is bought in small quantities and sold in Idiofa, Kikwit, and Kinshasa. Mboliaka buys 20,000 sacks of corn, which are sold through contracts in Mangai, the Kasais, and Kinshasa.

Credit presents no serious problem to Ets. Mboliaka. They managed to obtain two million Zaires for the 1983 buying campaign and their sale of consumer goods provides additional financing.

The greatest marketing constraint for Mboliaka is transportation. If roads were improved and vehicles and spare parts were readily available, Mboliaka would double its marketing of agricultural products in the Idiofa zone. The roads used by Mboliaka are neglected and in very poor condition, and the road from Idiofa to Mangai (a national road) is a particular problem in the transport of corn.

C. Agricultural Production and Prices

Agricultural production data for Idiofa zone are not very accurate or reliable but are shown in Table KW-7 to illustrate rough orders of magnitude. The production data show that manioc is the staple crop and sold rarely.¹

¹ The 1980-81 estimate of marketed output for manioc (chikvange) is implausibly high (88%).

TABLE KW-7
Agricultural Production and Commercialization in Idiofa Zone,
1980-81 and 1981-82

	Maize	Paddy	Peanuts	Millet	Coffee	Manioc Cossettes	Manioc Chikvange
1980-81							
Area Cultivated (ha.)	92,742	12,033	47,830	32,158	2,310	238,182	126,583
Production (MT)	122,449	11,624	53,093	20,815	2,246	1,041,915	443,000
Yield (kg./ha.)	1,321	966	1,100	647	972	4,374	3,500
Marketed Production (MT)	38,713	8,287	14,942	691	1,539	59,438	389,000
(as % of production)	32%	71%	28%	3%	69%	6%	88%
1981-82							
Area Cultivated (ha.)	103,932	18,947	47,900	22,300	2,947	383,569	133,179
Production (MT)	131,144	16,267	58,457	16,000	2,360	1,965,196	579,608
Yield (kg./ha)	1,262	859	1,220	717	801	5,123	4,352
Marketed Production (MT)	44,091	5,953	16,211	3,860	876	67,232	6,975
(as % of production)	34%	37%	28%	24%	37%	3%	1%

Source: Agronome du Zone, Idiofa

Millet, which is a secondary crop, also is reserved primarily for rural household consumption. Roughly one-third of the maize and peanut crops are marketed, according to the Agronome du Zone, while a somewhat greater proportion of the rice crop appears to be sold.¹ The commercialization estimates vary greatly between 1981 and 1982 for paddy, millet, coffee and manioc (Chikvange) and are clearly anomalies. These discrepancies cast doubt on the reliability of the full range of estimates.

Farmgate prices for commodities sold in Idiofa zone are lower than farmgate prices around Kikwit and Bulungu (compare Tables KW-8 and KW-5). Differences are attributable to relative ease of access to the principal market of Kinshasa. Traders based in Kinshasa are able to buy produce with less wear on their vehicles in the zones closer to the paved Kinshasa-Kikwit artery.

TABLE KW-8

Farmgate Prices for Selected Commodities, 1982 and 1983
(in Zaires/Kilogram)

	<u>Manioc</u>	<u>Paddy</u>	<u>Maize</u>	<u>Unshelled Peanuts</u>	<u>Fiber (punga)</u>
1982	-	1.4	0.6-0.8	1.4-1.5	2.2-2.5
1983	1.0-1.5	2.5	-	-	-

Source: Interviews with traders in Idiofa, April 1983
Affaires Economiques, Idiofa

¹ The commercialized proportion of millet production jumped from 3% in 1980-81 to 24% in 1981-82, which appears to be an anomaly.

94-A
TABLE B-6

Quantities of Agricultural Commodities Transported by
ONATRA from Bumba to All Ports on the Zaire River,
1981 and 1982 (in metric tons)

	1981	1982
Coffee	7961	1745
Rice	1710	1842
Rice Bran	547	514
Paddy	15	150
Maize	75	n.a.
Manioc (cossettes)	103	181
Peanuts	125	n.a.
Tobacco	325	n.a.
Cotton	1219	417
Palm Oil	9662	7802
Palm Kernels	4300	2584
Cacao	322	n.a.

Source: ONATRA, Bumba

Note: ONATRA prepared the 1982 estimates for the SFMA team in Bumba. The data do not appear to be complete, however.

IV. Field Trip to Bulungu

A. Road Maintenance in the Bulungu Zone

The consultant did not interview officials in the Bulungu office of the OR (Office des Routes), but he did travel on OR-maintained roads from Kikwit to Bulungu and from Bulungu to the market at Kidongo (in the Masi-Manimba region). The condition of the OR maintained rural roads was, in most instances, deplorable. Although the OR periodically grades the principal rural roads (typically once a year), the system of rural brigades has been poorly implemented for some time. Prior to Independence, the Belgians maintained rural roads by employing men (cantonniers) who used hand tools (shovels, machetes, and cutting tools) to fill in ruts and dig drainage channels at 10-20 meter intervals. The digging and periodic maintenance of drainage channels were particularly important in ensuring that the heavy rains did not wreak irreparable damage upon the rural roads. The abandonment and inadequacy of this system of hand maintenance has caused most of the rural roads to flood during rains and remain flooded for several days thereafter. Without sufficient drainage, the roads become mud ponds that are heavily rutted and increasingly impracticable. In steeply inclined sections, ravines often develop alongside the roads.

Officials in the Office des Routes in Kinshasa report that funds are allocated for hand maintenance of rural roads by cantonniers, but these funds do not appear to be used for cantonnage in the Bulungu zone. It is alleged that the OR absconds these funds (1100 Zaires per kilometer per year) and uses monies and materials for purposes other than road maintenance. It is alleged that fuel and lubricants are sold on the black market and that graders are sometimes rented out to companies or traders. The principal traders in the Bulungu zone do not have contracts with the OR for road maintenance, although they expressed interest in such arrangements. Several of the traders have rebuilt bridges and paid for regular road maintenance in collectivities where they regularly buy agricultural produce, store commodities (in depots), and operate canteens (rural stores).

PLZ maintains 285 kilometers of roads (and bridges) in proximity to its palm oil factory at Lusanga (midway between Kikwit and Bulungu) under contract to the Office des Routes. The consultant travelled over some 60 kilometers of roads maintained by the PLZ and was struck by the difference in the PLZ maintained as opposed to OR maintained roads. PLZ pays cantonniers to shape and repair the roads, maintain drainage channels, and rebuild bridges that have fallen into disrepair. While travelling over the PLZ roads, the consultant observed some ten to twelve cantonniers digging out drainage channels alongside the roads. In returning to Kikwit from Bulungu via bush taxi, he also waited about one half hour at a water crossing where a PLZ team finished rebuilding a 20 foot log and plank bridge. PLZ also owns and operates the ferry at Lusanga, where its processing plant is located.

The poor condition of many of the rural roads is an important constraint on commercial activity in Kwilu Subregion. Where road maintenance

be most effectively carried out in cooperation with private firms in Kwilu. Several firms already have contracts with the OR for road maintenance, by which they ensure regular maintenance of the roads most often used in carrying out marketing activities. As a result, wear and tear on vehicles is reduced and vehicle life is extended. Hence, such contracts lead to substantial cost savings rather than monetary profits. Unless the OR office at the regional level can reinstitute and effectively monitor the system of cantonnage, it is recommended that USAID not subsidize OR activities.

B. Fernandes Irmaos & CIE

Fernandes was established in 1944 in Bulungu and now has its seat in Kinshasa. It is the largest firm in Bulungu. It employs over 200 workers and operates palm oil processing plants at Yaya and Kimputu, which are located 68 kilometers to the northeast and 74 kilometers to the north of Bulungu respectively. Fernandes also employs 40 cantonniers who maintain roads and bridges regularly travelled by the firm's vehicles.

Fernandes is the largest buyer of palm products and maize in the Bulungu zone. Annual production data for the 1980-82 period are shown in Table KW-9. Virtually all of the maize, fiber, coffee, paddy and palm products are shipped to Kinshasa via barge. ONATRA services Bulungu on the Kwilu River. Fernandes owns and uses warehouses in rural areas and at Bulungu. Evacuation of the products by barge is slow but does eventually take place. The principal buyers in Kinshasa are DAIPN (Domaine Agro-Industriel Presidentiel de la Nsele) (maize), Amato Freres (coffee and palm products), and TISSAKIN (fiber). The firm buys manioc and paddy principally for subsidized distribution to its workers and staff.

Fernandes owns and operates a vehicle fleet of eleven ex-military Mercedes trucks (12-ton), ten Toyota trucks (7-ton) and three Berliet vehicles. The newest trucks in the fleet were bought in 1974-75 at parallel market rates, but the firm has been unable to acquire new vehicles since then. While all of the Mercedes ex-military trucks are running, only seven of the Toyotas and none of the Berliet trucks are in working order. The ex-military vehicles are especially well-adapted to the treacherous roads in the Bulungu zone, as they have about one meter of clearance yet are very stable. Fernandes has machine shops at each of its palm oil processing plants where routine maintenance and repair takes place. There is some evidence that the durable Mercedes are somewhat easier to keep running than other brands of trucks. The need for spare parts is somewhat obviated by the relative ease with which spare parts can be made or adapted to the ex-military vehicles.

Fernandes claims to maintain over 100 kilometers of rural roads on the right bank of the Kwilu, where its palm oil processing plants and principal buying zones are located. Yet the firm does not hold any contract with the Office des Routes, unlike several other opérateurs économiques, notably those based in Kikwit and Idiofa. Fernandes also uses primary roads maintained by Office des Routes that are connected to Bulungu and some of the neighboring collectivity centers. These roads are in poor condition and are in large part responsible for the relatively low utilization rates for the Toyota and Berliet trucks.

TABLE KW-9

Agricultural Commodity Purchases by
Fernandes Irmaos & CIE, 1980-1982
(in metric tons)

	<u>1980</u>	<u>1981</u>	<u>1982</u>
Maize	4015.6	3196.0	6625.9
Manioc	40.4	116.0	39.7
Fiber	350.8	595.9	221.3
Coffee	85.3	121.0	154.0
Paddy	-	5.4	7.3
Palm Oil	523.2	319.2	344.8
Palm Kernels	2491.6	2923.0	1893.1

Source: Fernandes Irmaos & CIE, Bulungu

Note: Nearly all of the maize, fiber, coffee and palm products are shipped by barge to Kinshasa. Manioc and paddy are bought irregularly and usually sold to Fernandes employees at subsidized rates.

Following the poor condition of the OR maintained roads, Fernandes cites the unavailability of new trucks, spare parts and fuel as major constraints. Diesel fuel can be purchased at Vanga, which is 26 kilometers to the north of Bulungu, where missionaries have storage tanks that hold up to 150 cubic meters of fuel. Truckers and private firms in the Bulungu zones have quotas for fuel allotments that are sold at Vanga at the official price, but the allotments are generally not sufficient to meet fuel needs during the buying campaigns. Traders procure much of their fuel on the black market. The traders based in Bulungu zone complain that some Kinshasa based truckers have cut into their fuel allotments by obtaining rights to buy fuel at Vanga. The consultant did not visit the missionaries at Vanga, so further details on the fuel distribution scheme need to be obtained.

Fernandes buys most of its products at markets in the Bulungu zone, which are held biweekly. The firm buys produce at 13 markets in five different collectivities (Mokamo, Mosango, Lunlungu, Kilunda, Nko). Women bring agricultural produce (palm kernels, maize, manioc and fiber) to the markets, where buyers employed by Fernandes weigh the produce and pay cash. Prices generally correspond with the regionally suggested minimum buying prices, although the arrival of buyers from other firms based in Bulungu zone sometimes forces Fernandes to pay higher prices. Fernandes also buys commodities (particularly palm products) from other locally based traders, who compete with Fernandes in the same markets.

Fernandes obtains loans from the BCZ (Banque Commerciale du Zaire) for the purchase of agricultural commodities. In 1983, the firm has applied for and will probably receive six million Zaires of credit. This relatively easy access to credit gives Fernandes a significant advantage over small and medium sized firms in the Bulungu zone, who are unable to obtain loans from BCZ or SOFIDE. The firm obtains its sacks (40,000 in 1983) from TISSAXIN in exchange for supplying the Kinshasa manufacturer with fiber.

Fernandes pays its workers (laborers, buyers, chauffeurs, mechanics) a base salary of 250 Zaires per month, which is supplemented by allocations familiales (0.25 Zaires/child/day and 0.50 Zaires/spouse/day), lodging subsidies (10-12 Zaires per day) and occasionally by the subsidized sale of manioc and rice. When Fernandes recently raised its salaries for palm cutters, it was asked to defend this policy in a meeting attended by the governor in Kikwit. The firm justified its actions on the basis of the rising cost of living in the Kwilu Subregion, despite complaints from competing firms. Fernandes argues that more attractive compensation is necessary in order to keep cutters working and supplying its palm oil processing plants.

C. Visit to the Kindongo Market (Mokamo collectivity, Masi-Manimba zone)

The market at Kindongo is held twice monthly, as are most other rural markets in Kwilu Subregion. I had the opportunity to visit this market on Saturday (April 9) with an employee of Fernandes. We left Bulungu at 5:00 in a twelve ton ex-military Mercedes truck and arrived at the market shortly after 9:15. The agricultural produce market opened around 12:30 and lasted

for about an hour and one quarter. Laborers from Fernandes then bagged the produce (principally palm kernels) and the truck left Kindongo at 16:45, arriving in Bulungu at 24:00. The round trip from Bulungu to Kindongo, which would be 170-180 kilometers if the roads were in good condition and none of the bridges were out, took us over 261 kilometers of some the worst roads I have travelled in West and Central Africa. The driver was forced to make several 15-20 kilometer detours in order to avoid Office des Routes roads that were impassable due to collapsed bridges or bridges on the verge of collapsing. The very poorly maintained OR roads, which contrasted markedly with roads maintained by PLZ and other firms, were often deeply rutted and did not have adequate drainage.

The market at Kindongo is principally a selling place for palm kernels and manioc. The market typically opens at noon and is monitored by a market chief, who supposedly supervises the buying in order to prevent unfair practices. Women line up in rows behind the five to seven buyers, who suspend hanging scales from a wooden support that is about ten to twelve meters long. While the buying is taking place, the market is a mass of movement and confusion. The weighing is done so rapidly that one wonders how accurately the produce is weighed. After weighing the produce, the buyers fling the wicker baskets onto a pile and grab the needed Zaires out of a suitcase or truck filled with bills. Although all of the buyers begin to purchase the palm kernels at the minimum price (0.8 Zaires per kilogram), some of them will often offer a slight premium to the women in order to attract as many sellers as possible. It might be useful however, to monitor periodically the weighing, which is done in such haste that it may not always be accurate.

After the women sell their palm kernels, they buy salt, dried and salted fish, cloth, sandals and batteries from small traders at the market. The purchase of consumer goods continues for about one hour after the close of the palm nut buying, after which the buyers and sellers disperse. The buying firms then enlist local women to help them bag the produce, the bags are weighed and sewn up, and free rides are provided to the women from nearby villages on the return trip. The three buyers from Fernandes purchased 107 sacks of palm kernels from women sellers and 33 sacks from a local merchant, who also participated in the market. The truck was loaded with approximately 8 1/2 tons of produce for the return trip.

In addition to the palm kernels, some manioc (about ten sacks), squash seeds and grilled pork were sold at the market. No unshelled peanuts, maize or rice were sold. Although cattle are raised in the area around the market, they are rarely sold and slaughtered at rural markets. Such sales are reserved for emergency needs or for payment of school fees.

D. ANEZA and the Role of Small to Medium Scale Merchants in Agricultural Marketing

There are at least a dozen medium size traders or representatives of agricultural marketing firms based in Bulungu and affiliated with the local branch of ANEZA. These merchants buy maize, manioc, paddy, peanuts, squash seeds, palm kernels, coffee and fiber for shipment to Kinshasa. They typically own and operate two or more seven ton trucks and import consumer goods from Kinshasa, which are sold at their stores in Bulungu and canteens in rural areas. Few of these traders are able to obtain loans from the BCZ or SOFIDE for the purchase of trucks and agricultural produce. Most of these

100-

traders were crippled by the 1980 demonetization, when they were unable to exchange truckloads of old Zaire notes for new bills. Although some of the wealthier merchants have again reached their pre-1980 level of operations or have increased their buying of agricultural commodities, most of the traders are operating at a lower level of activity with chronic shortages of vehicles, spare parts, fuel and working capital for produce buying.

Agricultural buyers are required to obtain a permit (100 Zaires) from the local authorities for each collectivity in which they buy. This permit authorizes them to purchase commodities at organized markets within the collectivity. Farmgate assembly of produce is illegal in Bulungu zone and punishable by fine. The Bulungu based traders claim not to assemble at the farmgate, but they allege that Kinshasa based truckers sometimes bribe village chiefs and buy manioc at the farmgate, typically at night. The prevalence of unethical practices is difficult to ascertain, although it is alleged that farmers are sometimes cheated and offered sub-minimum prices for produce at the farmgate in isolated areas. There is scope for improved monitoring of buying practices in Kwilu Subregion, although buying is supposedly supervised at markets by market officials and local agricultural extension agents.

The ANEZA members reported that the poor condition of the roads is their greatest problem, leading to rapid vehicle depreciation, high transport costs, frequent accidents, and slower turnover of capital. Traders claim that there are two to three accidents per month during the buying campaign, when the traders need to run their vehicles every day in order to turn a profit. These accidents include getting stuck in mud, the collapse of short wooden plank bridges, and flipping over of trucks on slippery, uneven and steeply inclined grades.

Shortage of credit for purchase of trucks, spare parts, fuel and produce, unavailability of the first three, and irregular availability of ONATRA barges are also cited as serious constraints. Fuel is only available in limited quantities at the Protestant Mission in Vanga or at high prices on the black market. Evacuation of produce by barge is slow, irregular and theft-ridden (losses are typically 5-10% on ONATRA barges. The SOZAM representative in Bulungu also reported losing 400 metric tons of a 2000 ton maize shipment when water leaked into an ONATRA barge en route to Kinshasa in 1982. Sacks acquired from TISSAKIN are sometimes poorly made, collapsing when loaded with produce. While most traders have storage depots in rural areas, delays in evacuation of assembled produce by barge does induce spoilage. The more perishable produce, particularly manioc, is trucked to Kinshasa shortly after assembly, while less perishable commodities are trucked from rural storage depots to larger warehouses at ONATRA ports or directly to the ports when barges arrive.

ANEZA has attempted to resolve some of the above difficulties by lobbying to the GOZ for members' access to trucks. ANEZA has also petitioned the petroleum companies for enlarged fuel allotments for agricultural buyers based in the Bulungu zone. Neither problem has yet been resolved. While traders at Bulungu are aware of contracts obtained by Kikwit merchants from the Office des Routes, they have not been able to negotiate such contracts for themselves. Most of the traders maintain rural roads and bridges in the

collectivities where they buy most actively.

In conclusion, the Bulungu chapter of ANEZA is a rather loose affiliation of merchants without much capacity to improve medium size traders access to trucks, spare parts, fuel and working capital. The Bulungu chapter of ANEZA is therefore like most of the other ANEZA branches in Zaire. Its intentions are good, it does provide smaller traders with some voice, but it offers members few concrete benefits.¹ Although CODAIK has worked closely with some of the largest and best financed opérateurs économiques in the Kwilu Subregion to date, it could consider expanding its activities to include ANEZA chapters that are typically supported most enthusiastically by medium size merchants.

¹ ANEZA requires members to pay annual dues. Companies (societes) pay 20,000 per year, while small to medium size firms (petits et moyens enterprises) pay 5,000 per annum.

ANNEX 6

Agricultural Marketing and Applied Research Activities
In Kinshasa

I. Association des Femmes Commerçantes (AFECOZA)

The Association des Femmes Commerçantes de Kinshasa has an office at the central retail market in Kinshasa, where we interviewed the Public Affairs Officers, Citoyenne Kombe. The once nationwide Association has been divided into regional offices and there are already branches in Kinshasa, Kisangani, Bukavu and Mbandaka. The Kinshasa branch has some 20 full-fledged members, who are principally cloth traders (specializing in Dutch wax). Hence, they are far wealthier than the typical woman trader, who usually retails or perhaps wholesales and retails food. Citoyenne Kombe reports that many women traders are interested in the Association, but few are able to pay the annual 2500 Zaire membership fee.

The Association has tried to obtain formal credit for buying agricultural produce and was promised credit at some indefinite point in the future. No formal credit has been received to date, however, and women traders are forced to rely upon traditional mechanisms of self-help and exchange. Typically, women pool their resources and allow one member of the pool to use the combined resources to finance trading activities during a fairly short period (no more than a couple months).

Although a few of the wealthier women traders own and operate trucks, most women have no transport at their disposal (see the Canadian study Commercialisation des Produits Agricoles du Nord-Est du Zaïre for very detailed information about demi-grossistes in Kinshasa, who are primarily women). It is quite common for women assemblers of foodstuffs to take public transport to producing areas in Bandundu or Bas-Zaïre, buy produce during a one to two week period in the villages (from other women), return to Kinshasa where they make arrangements to rent a truck with three or four other women, and return to the villages to load the truck for shipment to Kinshasa. Current truck rental rates vary from 2000 to 3000 Zaires per day, depending upon the supply and demand for trucks at the time of rental. The renters are obliged to pay for fuel, the chauffeur's salary and loading/unloading expenses. Some of these itinerant traders also sell cloth to women producers in the villages.

II. Agricultural Marketing Studies and Interventions of the Condition Feminine et Socio-Culturelle of the Division Economique, Condition Feminine

Citoyenne Mputela, who is head of the Direction Economique et Socio-Culturelle of the Division Economique is working closely with the FAO on a project designed to study the activities and problems of women traders based in Kinshasa. This project will identify a program of interventions that will assist these women. The two-year project (mid-1983 through mid-1985) will begin with a survey of women traders in five of the 24 markets in Kinshasa in May 1983. The markets chosen for the survey are the central retail market and

of women traders at each of the five markets. The studies will be primarily of a socioeconomic nature, but attention will also be paid to market infrastructure issues, particularly those involving transport and storage. These studies, which will be completed by mid-1984, will enable Citoyenne Mputala and her colleague F. Zaengel-Bevilacqua (FAO consultant) to identify problems and outline a program of interventions.

The Condition Feminine (in cooperation with PNUD/FAO) has also established a development center for women at Mongafulu, which is outside of urban Kinshasa proper but not far from Ndjili. The center offers a buying counter at which women farmers can sell produce at fair prices without having to stand alongside the Nsele-Kinshasa highway waiting for a trucker to stop and purchase their produce.

In such bargaining situations, the women are usually at a disadvantage and receive low prices. The Condition Feminine also hopes to encourage wholesale-retailers (demi-grossistes) and retailers who sell agricultural produce in the markets of Kinshasa to buy produce at the buying counter. The sellers will then be able to buy produce by the kilogram under far less pressured conditions than those common to wholesale transactions on side streets adjacent to markets in town. Typically, truckers arrive from Bandundu and Bas-Zaïre with loads of manioc, peanuts, rice, plantain and other produce and sell the produce directly off the truck in a one to two hour period. The competition for the produce among the women buyers is usually fierce, forcing prices to be bid up and increasing opportunities for unfair practices.

Over the longer run, the Condition Feminine would like to set up agricultural processing units and offer social services (health clinics) at a number of development centers for women in the region around Kinshasa. Canteens at the development centers would also offer consumer goods to women producers.

III. Visit to Kinshasa Marketplaces

We were able to visit two wholesale/retail markets in Kinshasa, where we interviewed a couple assembler-wholesalers and observed wholesale transactions and storage of produce near the marketplaces. One trader rents a truck to assemble manioc and peanuts in the Idiofa zone of Bandundu each week and then sells the produce to women traders in Kinshasa. He is not able to obtain loans for assembling produce, but he does pay 2000-3000 FCFA per day to rent seven-ton trucks for assembly of manioc and peanuts in remote areas of Idiofa zone, where produce is abundant and prices are low. He reported that manioc can be bought for 60-90 Zaires per sack at the farmgate and sold for 230-300 Zaires in Kinshasa, depending on supply and demand conditions at the time of sale. When he returns to Kinshasa with a truckload of manioc and peanuts, he is able to sell the produce on side streets adjacent to the wholesale/retail markets in one to two hours. None of the produce is weighed as the sales take place literally at the rear of the truck.

An assembler-wholesaler who buys manioc and plantains in Bas-Zaïre is also self-financed and has to rent trucks for 2000-3000 Zaires per day. He is able to rotate his capital in 4-5 days but typically completes the Kinshasa-Bas Zaïre-Kinshasa circuit once per week. He currently buys manioc at rural markets in Bas-Zaïre for 180-250 Zaires per sack. The higher

of Bas-Zaire to Kinshasa relative to Bandundu, as well as a marked quality differential. The manioc cassettes of Bas-Zaire are prepared in way that suits most Kinshasa consumers better than cassettes prepared in Bandundu.

Both traders mentioned that it is common for several assemblers to pool their funds in order to rent trucks. Or one individual may rent the vehicle and rent space to other wholesale buyers (at a minimum of 60 Zaires per sack for the trip from buying zones to Kinshasa). Regular access to transport is a problem. These assemblers are interested in acquiring trucks, but they barely have enough funds to meet produce buying and vehicle rental needs. Wholesale buyers who do not own trucks represent an important group of traders who would benefit from improved access to transport and working capital.

IV. Applied Research Activities of the Bureau d'Analyse Economique, Service d'Etudes, Departement de l'Agriculture et du Developpement Rural

The Bureau d'Analyse Economique, which is staffed by Zairois agricultural economists trained largely in the U.S. and by a Pragma Corp. team, has been conducting a series of agricultural commodity studies during the past two years. While the rice production and marketing study is the only one of these in print, studies of maize, peanut and bean production and marketing have been drafted and are being reviewed, typed and copied. A study of production and marketing of sweet potatoes and yams is also underway. The Bureau d'Analyse Economique has done a good job pulling together the often limited information on the important food crops. Farm-level and marketing surveys have typically been conducted in conjunction with these studies, usually in at least three different regions where the crops are produced in Zaire. Finally, a study of retail price trends in Kinshasa is also in progress.

The Bureau d'Analyse Economique is a good place to start in obtaining information about agricultural commodities. USAID/Kinshasa should prepare and periodically update a list of the working papers and publications drafted by the Bureau d'Analyse Economique. This would be useful for mission personnel and consultants who will evaluate ongoing agricultural production and marketing interventions and assist in the preparation of future projects. The Bureau d'Analyse Economique is also a good source of reference material prepared by other divisions of the Department of Agriculture and the various donor agencies working in agricultural development.

V. Retail and Wholesale Price Data for Food Crops Marketed in Kinshasa

The Institut National de Statistique, Division Urbaine de Kinshasa collects and tabulates weekly retail and (some) wholesale price data for a wide range of agricultural and non-agricultural commodities. Monthly averages are prepared and presented in monthly bulletins that can be purchased at the INS central office in Kinshasa. If USAID decides to intervene in Bandundu or Bas-Zaire, then it would be useful to monitor the evolution of wholesale and retail prices for principal food crops in Kinshasa, as well as farmgate and wholesale prices in several food production zones.

Sciences Economiques at the Universite Nationale de Kinshasa. The price series are published monthly in Cahiers Economiques et Sociaux. Citoyenne Mpuntu, who is the head of the Bureau d'Analyse Economique and is drafting the report on retail price trends, has noted little difference between the INS and IRES series.

Retail price statistics are also collected and published by regional offices of the INS in Kikwit, Bandundu, Bukavu and other large towns in Zaire. Some retail price data for Kikwit and Bukavu are presented in the Bandundu and Kivu annexes.

VI. Proposed Survey of Food Shipments to Kinshasa

Another potential source of information on the Kinshasa food supply situation is Citoyen Ntumba, Chef de Division Marches et Prix, ex-ONPV. He collects retail price data at nine markets in Kinshasa each week. He will also initiate a traffic survey in May 1983 or shortly thereafter in which the volume of agricultural produce trucked, transported by rail (SNCZ from Matadi), and shipped by river to Kinshasa will be recorded for a two-week period. Ntumba claims that information regarding the point of assembly, the tonnages transported, transport costs and assembly prices will be recorded for each vehicle entering Kinshasa from Bas-Zaire and Bandundu (via the main paved arteries), as well as for each barge and train. It would be useful to review the methodology of this study and any preliminary findings.

VII. River Transport of Agricultural Commodities to Kinshasa

The Inspection Commerciale of ONATRA tabulates statistics on annual shipments of agricultural commodities by ONATRA barge during the period 1980-82 (see Tables KIN-1 and KIN-2). The statistics are broken down by port of embarkation (Kisangani, Bumba, Mbandaka, Mangai, Kikwit, etc.) and by commodity. One table shows shipments via the Zaire River, while the other represents shipments via the Kasai and Kwilu Rivers.

ONATRA does not collect data regarding tonnages shipped via competing private companies. Comparative figures for the mid-1970s are available in the Canadian study, Commercialisation des Produits Agricoles du Nord-Est du Zaire, but these are now out of date. Private firms and traders report that private shipping companies comprise a significantly greater proportion of the river traffic now than during the mid-1970s, due largely to dissatisfaction with ONATRA's service.

Shipping statistics were not obtained from private companies, but some data may have already been collected by a French consultant to the Departement des Transports Fluviaux et Lacustres, statistical division. The consultant, who represents the BCEOM (Bureau Central d'Etudes Outre Mer) in Paris, did a short term study of river transport in 1982.

Although ONATRA owns and operates the principal port facilities at Kinshasa, other companies have facilities along the river. PLZ operates an extension of the ONATRA complex, at which it unloads and loads PLZ products transported by ONATRA as well as some goods shipped via private companies. PLZ products shipped by ONATRA are included in the ONATRA statistics while

TABLE KIN-1

Annual Shipments of Selected Commodities by ONATRA from
Points Along the Zaire River Between Kisangani and
Bumba to Kinshasa, 1981-1982
(in Metric Tons)

<u>Commodities</u>	KISANGANI		BUMBA		POINTS BETWEEN KISANGANI AND BUMBA	
	<u>1981</u>	<u>1982</u>	<u>1981</u>	<u>1982</u>	<u>1981</u>	<u>1982</u>
Timber	984	7.729	-	-	1.581	1.359
Coffee	2.844	1.715	8.381	1.767	123	124
Cocoa	-	-	152	431	123	394
Rubber	344	245	209	348	1.115	1.103
Cotton	20	142	925	231	20	-
Bark	253	1.987	-	-	15.780	13.570
Palm Oil	-	-	-	-	19.949	19.245
Maize	4	20	44	103	-	2
Manioc	66	8	91	86	1	-
Rice	294	611	1.633	1.090	4	1
Tea	-	-	-	-	-	-

Source: ONATRA Direction Commerciale, Kinshasa, March 1983.

TABLE KIN-2

Annual Shipments of Selected Agricultural Commodities by ONATRA from Points Along the Kasai and Kwilu Rivers to Kinshasa, 1980-1982

Commodities in	MAIZE			MANIOC			RICE			PALM OIL			FIBER			PEANUTS		
	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982	1980	1981	1982
Points along the Kasai River	2.563	51	5	169	27	47	1.470	797	198	8	-	-	-	-	97	1	-	-
MANGAI	8.212	6.406	6.198	6.336	3.686	5.290	3	2	50	153	243	840	628	-	630	456	230	323
Points along the Kwilu River	2.983	2.327	2.241	2.360	1.378	1.970	-	-	-	-	-	-	-	-	-	20	10	14
KIKWIT	7.330	4.923	8.294	3.350	6.331	4.644	203	533	351	10.826	11.656	8.012	396	1.419	464	923	752	1.722
BULUNGU	1.981	1.331	2.231	258	490	359	203	533	351	1.419	1.529	1.050	4	16	5	103	84	192
	4.838	3.256	5.485	844	1.597	1.161	-	-	-	315	340	223	348	1.248	408	168	137	314

Source: ONATRA, Direction Commerciale. Data for bean shipments are not available.

* Mangai is a part on the Kasai River and Kikwit and Bulungu are ports on the Kwilu River. Produce is also shipped by ONATRA barge from other points along these rivers.

AGAIN: Periods (within numbers, French system) correspond to commas (English system).

109

shipments by private companies are not. PLZ does not systematically tabulate tonnages shipped by private transporters, so they were unable to provide any data.

Ets. Madail, CCK and several other companies ship produce via private barge to Kinshasa. It would be necessary to visit each one of these firms to obtain data on tonnages shipped. Since it is not in their interest to spend time preparing this type of information, it is probably not worth investing much effort in trying to get it. M. Ezaoui, a French consultant to the Departement des Transports et Communications, may be able to provide USAID with a copy of the 1982 consultancy report.

VIII. Production and Distribution of Sacks in Zaire

Idris Husain, the director and manager of TISSAKIN, the sole sack manufacturer in Zaire, provided useful information about sources of fiber supply, and sack production, prices and distribution. USAID project 660-0025 has enabled TISSAKIN to acquire high quality jute from Bangladesh for sack production in recent years. TISSAKIN mixes this high quality material with locally produced fiber in manufacturing sacks. The Bengali jute is woven vertically while the locally produced fiber is woven horizontally in the cross-woven sacks. Husain reports that this cross-weaving produces a highly satisfactory sack, as the stronger, higher quality Bengali jute bears the brunt of the weight of the produce in the sack.

Compagnie Africaine Cooreman (CAC) is TISSAKIN's principal supplier of locally produced fiber. Other suppliers include Ets. Fernandes (Bulungu), the Catholic Mission at Djuma (in Kwilu Subregion) and a Canadian supplier named Bankai. TISSAKIN acquired 1000 metric tons of locally produced fiber in 1980, 2400 tons in 1981 and 1600 tons in 1982. In return for supplying TISSAKIN with fiber, the above companies receive new sacks from TISSAKIN.

Since local production of fiber is highly variable and the quality of local fiber is inferior to imported jute, TISSAKIN must procure jute from Bangladesh with foreign exchange. Under the terms of the 025 project, Husain is able to buy imported jute at the official exchange rate, but he must buy foreign exchange at the parallel rate for additional imports. In early 1983, several of the principal buyers of TISSAKIN's sacks provided Husain with foreign exchange for the emergency purchase of a shipment of high quality Bengali jute that happened to be at Antwerp at the time. He purchased 280 metric tons at the cost of 100 pounds sterling per ton. Shipping costs were the same as those between Bangladesh and Matadi (much to Husain's surprise). Husain was expecting another 025 shipment of jute in 1983, which was to arrive at Matadi in early May.

The TISSAKIN plant is presently operating at about 50% capacity, processing about 3000 metric tons of jute/fiber per year while production of 6000 tons is easily attainable. Although the supply of raw material is presently his most serious constraint, Husain also faces periodic shortages of fuel (late 1982) and spare parts. A SOFIDE credit for the extension of the TISSAKIN factory allowed the firm to set up a machine shop, which is able to produce most of the spare parts needed for the machines in the Kinshasa

Husain is presently deluged with demands for sacks. He is barely able to meet the demands of his principal buyers, who all have offices in Kinshasa and have been supplied by TISSAKIN for at least several years. TISSAKIN is so swamped with requests that it agrees to supply very few new firms each year. In other words, the distribution list is more or less fixed. Principal buyers of TISSAKIN sacks include Scibe Zaire, Sucrerie de Kiliba, Compagnie Africaine Cooreman, Beltexco, Renault-Zaire, Cie Sucriere and Utexco.

Husain claims to have worked out a sack distribution scheme for Haut-Zaire and Kivu in 1982. He agreed to supply Beltexco in Haut-Zaire and TMK (Transport et Messagers du Kivu) in Kivu with regular shipments of sacks via barge to Kisangani. Those firms would sell in turn at an agreed upon price to other buyers. The distribution system broke down in October 1982 when TISSAKIN was forced to close down operations due to a shortage of jute. Although Husain would like to supply regions other than Bas-Zaire, Bandundu and Equateur with sacks on a regular basis, he claims that he cannot do so as long as his supply of jute is uncertain. He does not intend to distribute sacks in Shaba Region, where the sacks used in importing maize into Shaba from South Africa and Zimbabwe satisfy the demand.

Individuals Contacted During the Study

KINSHASA

Pragma Corporation

Mr. Curt Rainstema
Mr. Chan Nguyen
Mr. Georges Conde

Chief of Party
Agricultural Economist
Agricultural Economist

Department of Agriculture and Rural Development

Cit. Mansinza

Directeur, Commercialisation et Prix

Office des Routes

M. Roland Moens
M. Alain de Penfentanyo

Charge des programmes internationaux
Ingenieur

ONATRA

M. de Wilde
Cit. Isasi

Controller General
Direction Commerciale

SNCZ

Cit. Sapu Cafita

Attache Commercial

COOPERATION ZAIRE CANADA

M. Jean-Claude Mailhot
M. Hermogene Durand

Economist
Conseiller Technique en Developpement
Rural

USAID

Richard Podol
Lee Braddock
David Leong
Leon Wasikin
Ann Williams

Director
Chief, DEO
Assistant Capital Projects Dev. Officer
Projects Officer
Projects Officer

Richard Peters
Robert Navin
David Soroko

Chief, ARD
Agricultural Economist
Project Officer, North Shaba Dev.
Project

Derek Singer
Judith Brown

Chief, GDO
Nutritionist, USAID Consultant
to CEPLANUT

John Babylon
Richard Handle

Chief, PRM
Program Economist

Citoyenne Kombe

Charge des Relations Publiques,
Association des Femmes Commerçantes
de Kinshasa

Citoyenne Mputela

Division Economique, Direction
Economique et Socio-Culturelle,
Condition Feminine

Mme. P. Zaengel-Bevilacqua

Conseillere Technique,
Condition Feminine

Cit. Malembe	Representant de CODAIK, Bureau de Representation, Kinshasa
Cit. Ntumba	Chef de Division Marches et Prix, EX-ONPV
Cit. Mulamba	Directeur du Port de Kinshasa
Cit. Tshibangu Kalala	Institut National de la Statistique (I.N.S.), Direction Urbaine de Kinshasa

KONGOLO

Projet Nord-Shaba	
Cit. Mutimura Nyirumuringa	Directeur a.i.
Mr. David Gow	DAI Advisor
Mr. Robert Ackerman	Director, Administration & Finance
Cit. Mpunga	Chef, Commercialisation et Credit
Cit. Useni	Chef, Recherche
Mr. Minh Nguyen	PNS Research Station Advisor
Cit. Shukulu Mulambo	Chef de Brigade Speciale
Cit. Bongu Bomua	Chef de Routes Rurales
M. Claude Couture	PNS Infrastructure Advisor
Cit. Mutembo	Agronome du Zone
Cit. Nkaka Nsungu	Chef de Brigade, Office des Routes
Cit. Mulamba	Chef du Zone, SNCZ
M. Marcel Francois	Chef de Sector, ESTAGRICO

ANEZA

Cit. Mbayo Moke	President
Cit. Mumba Lufungula	Vice President
Cit. Muganga Lubutu	Secrtaire General
Cit. Kisimba Mwana Tambwe	Conseiller
Cit. Muteba Mwamba	Caissier
M. A. Sakima	Commerçant
Cit. Kanyohge Lipu	Chef d'une mutualite

Kuvu Sola Mission
Pere Antonio
Pere Kuler

BUKAVU

Cit. Nyaloka Zizi	Commissaire Urbain
Cit. Mutokambali	Commission au plan
Cit. Mutokambali Alfani Katembo	Directeur Regional, INS

ANEZA

Cit. Bosuma Bakili	Directeur Regional
Cit. Namegabe Lwananza	Secrtaire administratif

MASI/INERA

Mr. Steve Mack	Chief of Party
----------------	----------------

GOMA

Cit. Faruzi	Affaires Economique et Statistique
Cit. Tohimanga Mbwebue	Air Controller, Goma Airport
Cit. Manpuya	Veterinaire du zone
Cit. Kungurwa Eihango Mupanda	Directeur-Garant COPEVI
M. Friedmann	UNIDO expert at ANEZA
M. Le Clerc	CIDA Chief of Party

Commercants

M. Michel Nungovitch
M. Kostis Anthamasios

Transporters

Cit. Singa Bunganudzi	Directeur TMK
M. Jean Wauters de Besterfeld	Directeur Maliwa Fret Aerien
M. J. Abans	Directeur Katala
M. P. Verhoestraete	Katala
Mr. G. Noel	Katala
Cit Kasuku	Directeur, ACOGENKI

BOMBA

Cit. Ipaya Gele Glonga	Commissaire de la Sous-Region
Cit. Mongambo	Agronome
Cit. Ebunde Monga Adala Ekundakunda	Chef de Collectivite Itimbiri
Cit. Maluzeyi	OZAC
Cit. Ngudie	Chef du zone ONATRA

PNR

Cit. Nyanguile Nkongolo M'Bayi	Chef de Station
Cit. Kenda Kenda	Chef de sous-station

Cit. Yogo

President de sous-region ANEZA

Commercants

M. Olympius	Socam
M. Joaquim Roxinas	Scibe-Zaire, Itimbiri
Cit. Adoula	Griza, Directeur du zone
M. Poideloup	Griza, Directeur Technique
M. Santos	Comagrin, Directeur du zone

Transporters

M. Kyriacou Atanase	
Cit. Madia	Amiza

KIKWIT

Nkiari Malibuy

INS (Institut Nationale Statistique)
Direction Regionale de Bandundu

CODAIK (Compagnie du Developpement Agro-Industriel du Kwango-Kwilu)

Andre Leduc

Directeur General de CODAIK

Cit. Kimbonja
Cit. Kidinda Mandouba
Mr. Maistriau
Leo Malenfant
Luis Caprazio
Cit. Yanga

Mr. Neres
Cit. Iboko-Nkar-Inwan
Almeida Georges
Mr. Mikhailis

Directeur et Gerant, Ets. Kimbonja
Gerant, Ets. Oliviera
Eleveur et Comercant
USAID Project, 660-0026
USAID Project, 660-0026
Directeur, Banque Commerciale Zairoise,
Succursale de Kikwit
Gerant, SOLBENA
Comptable, Ste. Bulangelu
Directeur Commercial, Ets. Madail
Representatif de la Compagnie
Africaine Cooreman, Succursale de
Manga

IDIQFA

Cit. Kalvanda Kungesi
Mr. Martinage
Rev. Pere Jean Marie Ribaucourt
Cit. Nkwa

Cit. Mukulu
Cit. Ilanga Mutombo Muteba

President ANEZA, Idiofa
Directeur Regional C.C.E., Idiofa
Responsable D.P.P., Idiofa
Secretaire Service Agriculture de la
Zone Idiofa
Gerant ets. Bitshi, Idiofa
Inspecteur des Prix, Service Economie
Nationale de la Zone, Idiofa

BULUNGU

Tavares Jose
Fernandes Jose
Cit. Katunda
Sousa Philippe

Cit. Itutu Mbwisi
Cit. Ngiama Kimvuta

Cit. Mafandala-Mbembu

Cit. Menga Kamongo

Jame Dias

Cit. Mboma Wakambamba
Charlotte Flannery

Representatif de la Compagnie Agricoba
du Bandundu
Directeur Adjoint, Fernandes Irmaos
& CIE
Chef du Personnel Charge des Relations
Publiques, Fernandes Irmaos & CIE
Commercant et Gerant d'une Huilerie,
Putu Bongo, Collectivite de Kilunda,
Zone de Bulungu
Directeur, Ets. Itutu
Commercant, Kikongo Tanku,
Collectivite de Luniungu, Zone
de Bulungu
Directeur, Ets. Mafa-Mbe and
President, Bureau Sous-Regional de
l'ANEZA
Secretaire, Bureau Sous-Regional de
l'ANEZA
Representatif de la SOZAM (Societe
Zairoise de l'Alimentation)
Secretaire, Ets. Eyu-sa
Peace Corps Volunteer Science
Teacher, Protestant Mission School,
Mongom-Bala (70 kilometers Northeast
of Bulungu

BIBLIOGRAPHY

A. Republique du Zaïre:

Departement de l'Agriculture, du Developpement Rural et de l'Environnement, Bureau d'Etudes et du Programmation, Situation Actuelle de l'Agriculture Zaïroise, Sept. 1982.

_____, Service de la Production et de la Sante Animale, Region du Kivu, Sous-Region du Nord-Kivu, "L' Abattoir de Goma" et la Commercialisation du Betail et des Viandes, rapport par Dr. Mampuya Luvuang, Medecin Veterinaire, Janvier 1983

_____, Office National de Promotion des Produits Vivriers, La Commercialisation des Produits Vivriers, Aout 1980

_____, "Evaluation de la Commercialisation des Produits Vivriers au Sud de l'Equateur (Campagne 1981)," Octobre 1981

_____, Commission de la Commercialisation, des Intrants et des Prix Agricoles, "Rapport de la Sous-Commission des Prix", Fevrier 1982

_____, Projet Nord-Shaba, "Rapport Mensuel: Decembre 1982, Janvier et Fevrier 1983."

_____, Projet Nord-Shaba, Service de Collecte et Analyse des Donnees, "Resultats Deja Obtenu", Juillet 1982

_____, G. Conde, Paddy and Rice Marketing in Zaïre, Octobre 1981

Region du Kivu, Kivu Economique a la Foire Nationale, 1982, Bukavu, 1982

INERA, Station Principale de Mulungu, Service de Vulgarisation, "Rapport Annuel 1982."

ONATRA, Zaïre-Afrique: l'ONATRA et son Plan Quinquennal, Avril 1981

Departement de l'Agriculture, du Developpement Rural et l'Environnement, "Sous-Commission, Commercialisation et Prix", 1983

_____, Projet No. 4.505.033.55.34, Etude d'Identification et Dossier de Prefaisabilite du Developpement Agricola et Socio-Economique du Zaïre Occidental en Vue de Ravitailler le Centres Urbains, FED, Decembre 1982

_____, Bureau d'Etudes et du Programmation, Production et Commercialisation du Mais au Zaïre, G. Conde, Mars 1983

_____, Projet Nord-Shaba, Sous-Secteur d'Assistance a la Commercialisation, Mpunga T.T., Rapport Annuel, 1982

_____, Secretariat d'Etat au Developpement Rural, Projet ZAI/78/001, "Developpment Rural Integre du Kwilu", Le Milieu Rural et Son Developpement au Kwilu, Resume d'une Etude, Document de Travail, PNUD/FAO, redige par Louise Masco, 1981.

B. Agency for International Development

USAID/KINSHASA

C.P. Nguyen, "Marketing and Pricing Policy: Proposed Guidelines and Recommendations on Policy and Strategies to Improve the Marketing and Pricing System in Zaire," Pragma Corporation Agricultural Studies Team, 1981

Country Development Strategy Statement for Zaire, Feb. 1983

Bruce Spake and Tshishiku Kabundi, Trip Report (Uvira, Ruzizi Valley and Kalemie), March 1982.

MASI, C. Schoepf, "Soybean Production and Consumption in Southern Kivu Province-Zaire", August 1982.

MASI, C. Schoepf, "Results of Base-line Survey in Four Localities near INERA Mulungu Station, Kivu Province", August 1982.

R. W. Vinita, "Grain Storage in Project North Shaba", 1981.

Evaluation of the North Shaba Rural Development Project, 1982

Eric Tollens, Marketing of Food Crops in Zaire, Scope of Work for the Agricultural Sector Studies Project (070), Prepared by USAID/Kinshasa and the Republic of Zaire, Department of Plan, March 1979.

Elizabeth Reid, USAID/Kinshasa, Socio-Economic Base-Line for the Kwilu Road Building Component of the Agricultural Marketing Development Project Project No. 660-0028, May 1982

Judith Brown, USAID Consultant to CEPLANUT, Area Nutrition Improvement Project (660-0079), USAID/Kinshasa, Trip to Kikwit, December 14-18, 1982.

_____, Preliminary Report on the Causes of Malnutrition in the Bandundu Region, Zaire, February 1983.

_____, "Report of Trip by Air to Bandundu Region, Zaire, 22-25 March, 1983".

Michael McLindon, "Trip Report to Bandundu, December 14-24, 1980".

Robert E. Navin, "Notes on Meeting with FAO's Barrier and Merchants in Idiofa".

_____, "Notes on ONPV report Jan 1981, Marketing in the Kwilu".

_____, "South Shaba: An Expanding Market for the Farmers of North Shaba?", March 1983.

OTHER AID

G. Finne, "AID Integrated Rural Development Project for North Shaba, Transportation Subproject", 1976.

Deanda Osmond and Tshishiku Kabundi, "Trip Report on Visit to the Sub-Regions of Kikwit and Kwilu in Bandundu, October 1982".

Derek Singer, GDO, USAID/KINSHASA, "Trip Report -- Bandundu Region, October 25-26, 1982".

Tshishiku Kabundi, "Reflexion Sur Quelques Problemas de l'Agriculture au Bandundu, 1982"

_____, "Rapport de Voyage, Visite au Nord Kivu," May 1982

C. IBRD/World Bank

Zaire: Agriculture and Rural Development Sector Memorandum, 1980

Zaire, Economic Memorandum: Recent Economic and Sectoral Developments and Current Issues, Report No. 4077-ZR, December 1982.

Staff Appraisal Report: Fifth Highway Project, June 1982, Report No. 3757a-ZR

_____, Fourth Highway Project, May 1979 Report No. 19846-ZR

_____, SNCZ Railway Project, April 1979 Report No. 1986-ZR

_____, North East Rural Development Project, Jan. 1983, Report No. 4103-ZR.

Zaire, Kwango-Kwilu Agricultural and Livestock Development Project : Staff Appraisal Report, Implementation Volume, September 1979.

D. ANEZA:

"Pour Memoire," 24 mars 1983, Bumba

M. Reyners, "L'immigration en zone de Masisi et de Kalebe", Aout 1980, Kivu.

Cit. Burume Karani, "Rapport sur la Cooperative de Consommation de Butale (CoCoBu)," Juillet 1982, Kivu. 84Compte Rendu de la Reunion Tenu avec les Representants de Quelques Cooperatives de Butembo", 1982, Kivu.

"Bref Apercu sur l'Union des Cooperatives Agricoles de Nord-Kivu (UCOOPANKI)", 1982

Etude de la Commercialisation des Produits Vivriers dans la Region du Kivu, unpublished study still in progress in Bukavu.

E. FAO

F. J. Chagnaud, "Commercialisation du Betail et des Viandes dans le Nord-Kivu," Rapport de Mission, janvier 1982.

Projet d'electrification de Masisi, undated.

Projet de Developpement de l Elavage du Nord-Kivu, FAO/ZAI/71/015, Fiche de
Projet, Fevrier 1982.

_____, Rapport Annuel, 1981.

Projet d'Assistance a l'ONPV, "Mission de Consultation sur la
Commercialisation dans le Kwilu", Rapport prepare a l'attention du projet de
developpement rural integre du Kwilu, janvier 1981.

Harper, Malcolm and Richard Kavura, editors, The Private Marketing
Entrepreneur and Rural Development, FAO Agricultural Services Bulletin, FAO,
1982.

F. DIVERS

Universite Nationale du Zaire, Institut Superieur Pedagogique de Bukavu,
Centres de Recherches Universitaires du Kivu, Atlas de la Ville de Bukavu,
1981.

S. Garuka, "Systemes Agricoles et Structures des Exploitations Agricoles au
Kivu", Cahiers du Ceruki, No. 3, mars 1981, pp. 107-122

Atlas de la Republique du Zaire (Paris, editions j.a., 1978). Jeune Afrique.

Societe de Developpement International Desjardins, Commercialisation des
Produits Agricoles du Nord-Est du Zaire, Rapport Final, Projet No. 195-00402,
4 Tomes, septembre 1981.

Fonds Europeens du Developpement, Rapport Annuel d'Activites de la Commission
des Communauts Europeennes, 1982.