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Postharvest Grain Systems R&D

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RICE PRODUCTION AND MARKETING
IN GUINEA BISSAU
A CONTRIBUTION FOR POLICY DIALOGUE



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RICE PRODUCTION AND MARKETING IN GUINEA BISSAU
A CONTRIBUTION FOR POLICY DIALOGUE

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ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

Acronyms and abbreviations:

- AP = Armazens do Povo
- CAAPLE = Cooperativa de Apoio a Agricultores de Provincia del Este
- CFA = Central African Franc, parallel market rate varied between 8 and 9 CFA per Guinea Bissau Peso
- CILSS = Comité Permanent Interetats de Lutte Contre la Secheresse Dans le Sahel
- DEPA = Departamento de Experimenterçao e Pesquisa Agricola
- DESECO = Servicio de Desenvovimiento Economico
- DHAS = Departamento de Hydraulica e Sol
- FAO = Food and Agriculture Organization, United Nations
- FIDA = Fondo Internacional de Desenvolvimiento en Africa
- GB = Guinea Bissau
- GGOB = Government of Guinea Bissau
- INEP = Instituto Nacional de Estudos e Pesquisa
- IMF = International Monetary Fund
- MOA = Ministry of Agriculture
- MOC = Ministry of Economic Coordination, Commerce and Tourism
- MOF = Ministry of Finance
- MOP = Ministry of Planning
- PAM = World Food Program
- PDOT = Projecto de Desenvolvimento Orizicola de Tombali
- PG = Guinea Bissau Pesos, exchange rate at hotel 1840peso/US dollar, parallel exchange rate 2600 to 2900 pesos per dollar, exchange rate used in most of our calculations is 2000 pesos per dollar
- STS = Stenaks Trading and Shipping Company
- USAID = United States Agency for International Development

Definitions:

coconote = oil palm kernel

mancara = peanuts

rice = decortigated, clean rice

paddy = non-decortigated rice

kg = 1,000 grams

ha = hectare

k = one thousand

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EXECUTIVE SUMMARY

Since the early 1980s, Guinea-Bissau (GB) has undertaken a series of economic policy adjustments designed to increase the market orientation of its economy. The primary instruments of the liberalization process, as it is called, have been the abolishment of public monopolies, the reduction or elimination of restrictions on the entry of the private sector into all market areas, the abolishment of price controls on most goods and services, and changes in monetary and fiscal policy to constrain inflation and stabilize the currency.

While the results of these reforms have been encouraging, resulting in significant economic recovery and growth, there is still a mixture of hope and anxiety within the public and private sector about the final outcome of these reforms. While the private sector is taking advantage of investment and marketing opportunities, it is still uneasy about whether or not these reforms will last. On the other hand, the public sector, being responsible for the welfare of all citizens, has certain apprehensions in regard to the impacts of these reforms, and in regard to its new role in support of a market-oriented economy.

Rice, being the most important agricultural production commodity and staple food in the country is at the center of these reforms. The objective of this study is to set the stage for generating a better understanding of the nature and implications of the policy reforms on rice production, marketing, trade, and utilization. Such understanding will assist in defining the appropriate new role for the public sector, strengthening private sector initiatives, and reducing existing anxieties. For this purposes, the team (1) reviewed the sources and uses of rice (Section II), (2) conducted a study of the structure, conduct, and performance of the rice marketing system (Section III), (3) analyzed apparent and potential future impacts of policy reforms on the rice-subsector (Section IV), and (4) prepared a series of conclusions and action recommendations designed to encourage further private sector development, and institutional strengthening in support of such development (Section V).

The impacts of the liberalization process on the rice-subsector are defined as positive, transitional, and negative. Positive impacts are those which have had, or likely to have desirable economic and social outcomes at the producer, market, and consumer level. Since some of these impacts have the potential for turning neutral and even negative, monitoring their development in the future is essential. Positive impacts were be identified as follows:

- (1) internal barter terms and prices reflect more closely the related international prices, resulting in increased production of rice and cashew nuts,
- (2) increased competition at all levels, but especially at the village-level, resulting in an increase in the goods and services offered to farmers,
- (3) increased village-level rice processing, resulting in more value-added benefits for farmers and in the release of rural labor for other uses,

- (4) increased number of national and village-level marketing organizations, providing training and experience needed for a market-oriented economy,
- (5) increased availability of transportation services, and
- (6) increased rural wealth.

Two important transitional impacts were identified which need to be further clarified, understood and supported. These are:

- (1) The development of a private sector rice marketing system is taking place. So far, this has been a very positive force for the revitalization of the economy. The private sector, with the aid of the public sector, has provided needed production inputs, marketing credit, transportation, and national and international outlets for agricultural commodities at competitive prices. However, the system is still evolving. Its final structure remains undefined as linkages, trusts, market areas, and competitive positions are still being established. There is a need to strengthen this development through the provision of infrastructure and facilitatory services. And there is a need to monitor the development of the market system to insure that it remains a positive force.
- (2) It appears that the public sector has not yet defined and prepared for its role in a market-oriented economy. Laws and regulations appear to be more appropriate for previous eras than for modern-day Guinea-Bissau. This new role should facilitate the efforts of the private sector in developing the nation's economy while maintaining enough control to guide the economy through periods of stress.

Negative impacts are those which have the potential for undesirable economic and social outcomes, and should, therefore be closely monitored and analyzed. The negative impacts could be identified as follows.

- (1) The impact of increased consumer rice prices on low income urban dwellers appears to have been negative.
- (2) The potential effects of inter- and intra-seasonal price fluctuations, and the linkages to the international rice market can be destabilizing, unless adjusted for. They need to be analyzed and taken into consideration in the development of the nation's food policy to minimize their potential negative and destabilizing aspects.

Conclusions and action recommendations were developed and prioritized for certain key areas in the private and public sectors. Institutional strengthening and additional studies in support of some of the action recommendations are included. A brief review of the key conclusions and recommendations are provided here, while detailed action recommendations can be found in Section V.

- (1) There is a need to establish and promulgate a definitive cereal food policy for the nation. This should be done without delay.
- (2) Further reductions of restrictions, exemptions, and subsidies on rice movements within the country should be undertaken as soon as possible.
- (3) The elimination trade taxes should be seriously considered, and the reduction of the cost of commercial licenses should be studied.
- (4) Development and implementation of a stable and relevant legal environment for commerce and trade is essential.
- (5) Additional credit and credit sources for capital inputs and marketing are needed, and should be made available.
- (6) Rural banking facilities and services are fundamental for the development of a market oriented agricultural production system, and should be introduced as soon as feasible.

Basic food (rice/cereal) policy issues and agricultural market development require institutional strengthening efforts to provide policy decision makers and the private sector with sound analysis, information, guidance, and regulation. This can be achieved through a medium- to long-term effort to develop:

- (1) a specific institutional capacity to undertake continuous cereal policy analysis and formulation,
- (2) a complementary institutional capacity to collect, analyze, and disseminate supporting supply, marketing, and utilization information, and
- (3) a similar institutional strengthening effort to develop a sound and stable legal environment for commerce and trade.

SECTION I

INTRODUCTION

A. Policy Reforms and Expectations ¹

After independence in 1974, Guinea-Bissau adopted a system of centralized planning with heavy emphasis on market control. The lack of managerial skills in the economy, resulted in misallocation of resources, growing deficits, and slow growth. By 1980, the country was faced with severe financial difficulties and shortages of basic food items as well as other consumer and intermediate goods. The droughts of the early 1980's aggravated the economic problems. The growing deficits and the overvalued currency led to increases in external borrowing and imports. By 1983, the foreign credit line was exhausted and the country was more dependent than ever on foreign aid, contributing about two-thirds of government revenue.

The growing economic distortions and mounting debt service finally forced policy reforms. The main reforms were devaluation, increased producer prices for main crops, limits on wage increases, consumer price adjustments reflecting import costs, liberalized marketing, increased income taxes, and restricted government expenditures.

Price controls, however remained quite strong, including fixed retail prices for most food items, subsidized prices for public employees, fixed producer prices for agricultural commodities, supervised prices for manufacturing and services, and fixed margins for other goods. These lingering price controls slowed the success in redirecting resources to more productive uses, and output from unofficial to official or formal channels. In 1986, a gradual phase out of these price controls was initiated, leading to free market determined prices for all agricultural commodities, consumers goods, and imports.

Prospects for continued economic recovery and growth, specially in agriculture over the medium term are promising, provided that an expansion of the basic infrastructure is evenly accompanied by adequate price incentives, a realistic exchange rate policy, improvements in the marketing system, and prudent financial policies.

B. Reasons and Objectives of Rice Market Study

The policy and market changes taking place are unprecedented in the history of the nation. Consequently a mixture of hope and anxiety exists within the public and private sector about the final outcome of these changes. While the unshackled private sector responds to free market signals and allocates resources accordingly for its own benefit, the public sector feels the need for a new identification and role to reorient public resources in support of private sector development and continued economic growth.

¹Global Review of Agricultural Policies, USDA/ERS/ATAD, May 1988.

The anxiety within the private sector and the apprehension within the public sector are interlinked, yet different based on their perspectives and understanding of the changes taking place. While the private sector takes advantage of new opportunities, it also takes commensurate risks, including the uneasiness about whether or not these changes will last. On the other hand, by liberalizing the economy, the public sector finds itself free from having to plan, dictate, control, and be responsible for undertaking marketing functions related to agricultural products, inputs, and other consumer goods and services. While these changes are welcomed and supported, the public sector's apprehension is in regard to the its new role and activities in support of private sector development, and in insuring that these changes are beneficial for all.

The objective of this study is to generate a better understanding of the impact and implications of the policy reforms and market changes taking place. Such understanding is crucial, for planning and executing future developmental activities and programs which will strengthen the positive aspects of these changes and reduce existing anxieties and apprehension present in both sectors.

The purpose of this collaborative effort is (1) to conduct a study of the structure, conduct and performance of the rice marketing system, and (2) to analyze the apparent and expected impacts of recent GOGB policy changes on rice production, marketing, and consumption, and (3) to provide GOGB and OAR/Bissau with policy and market related action recommendations and follow-ups, designed to improve food policy analysis, planning, formulation and implementation, and assist private sector market development efforts (see Annex 1 for complete statement of work).

C. Commodity Characteristics and Importance

A final justification for calling this a Rice Market Study is based on the importance of the commodity to the economy and the citizens of Guinea-Bissau. Agriculture is by far the most important economic sector in the country in terms of production, employment, income generation, and foreign exchange earnings.

Agriculture employs 80% of the economic active population, contributes about half of GDP, and two-thirds of total export earnings. The major food crop is rice, followed by sorghum, millet and corn, sugar, and beans. The major export crops are cashews, palm kernels, peanuts, and cotton.

Rice is produced, under different systems by all ethnic groups, and in all areas of the country. Rice production accounts for 52% of the land area devoted to grain production, with sorghum accounting for 25%, millet for 13%, and corn only 10%.

Rice is also consumed by all ethnic groups, and represents the basic staple food for every woman, man, and child in the nation. As such it constitutes the primary source of calories for the population. Table I-1 contains the average number and source of calories consumed in Africa, Senegal, Guinea-Conackry, and Sierra Leone. No comparative numbers are available for Guinea-Bissau. However, these do provide an indication of the importance of plants, specially rice as a source of calories in the diet of these nations. There is no reason to believe that Guinea-Bissau is any different.

TABLE I-1

FOOD SUPPLY: CALORIES PER CAPITA PER DAY - NUMBER

Year -----	Total -----	Plants -----	Animal -----
<u>Africa</u>			
1961-63	2,093	1,933	161
1969-77	2,178	2,006	171
1979-81	2,327	2,143	184
1984-86	2,299	2,120	179
<u>Senegal</u>			
1961-63	2,311	2,095	216
1969-77	2,376	2,163	213
1979-81	2,397	2,217	179
1984-86	2,336	2,165	171
<u>Guinea-Conackry</u>			
1961-63	1,841	1,795	45
1969-77	1,950	1,905	45
1979-81	1,833	1,765	68
1984-86	1,782	1,713	69
<u>Sierra Leone</u>			
1961-63	1,620	1,565	56
1969-77	1,956	1,887	69
1979-81	2,052	1,966	87
1984-86	1,868	1,798	70

Source: 1988 FAO Production Year Book

TABLE I-2
QUALITY OF DIET BY REGION

Area of Study	Energy derived from rice per head per day	Evaluation of diet; undertaken by a nutritionist	Lack of basic food items
Tombali	2,700 Kcal	Lack of vegetables	None
Oio	1,700 Kcal	Inadequate; lack of calories and proteins	Yes
Cacheu	1,500 Kcal	Inadequate; lack of calories and vegetables	Sometimes
Bijagos	1,750 Kcal	Inadequate; lack of calories, vegetables and fruits	None
Bandim	1,700 to 2,500 Kcal	Inadequate among low income consumers; lack of calories and vegetables	Insufficient quantities

Source: Analyse de la Situation des Enfants et des Femmes en Guinee-Bissau, UNICEF-Bissau, May 1988, Table 24.

A recent study undertaken by UNICEF to assess the nutritional conditions of children and women in Guinea-Bissau (see source, Table I-2) substantiates the importance of rice in the daily national diet. Rice provides the bulk of the daily calories, ranging from 2,700 Kcal in Tombali to 1,500 Kcal in Cacheu. While some of the differences may be attributable to regional eating customs and habits, the third column of Table I-2 points to other nutritional (and therefore income) reasons.

Only in the South, where a surplus of rice is available, a sufficient amount of daily calories seems to be consumed. All other study areas had inadequate nutritional intakes, with a lack of calories being common.

The study also indicates to shifts in consumption patterns as disposable incomes increase. In Bandim (periphery of Bissau) rice provided 50 percent of the daily calories among low income households verses one third among higher income households which diversify their diets with other basic foods such as meat, canned milk, fish, and fats.

SECTION II

SOURCES AND USES OF RICE

A. Rice Utilization

Rice utilization in Guinea Bissau shows some standard utilizations as well as some unique ones specific to the country's cultural characteristics and socio/economic situation. Besides being the most important staple food in the nation, it is also used as a means of storing value and as a trading good for bartering arrangements. It is used as a source of production working capital; used for seed, and suffers from production and post-production losses as well. It is also utilized as an ingredient in beer manufacturing, and apparently also exported or re-exported to neighboring countries.

1. Human consumption

In terms of human nutrition in the country, rice is the most important source of calories for the population. Rice is eaten at least 3 times per day in rural areas, and twice per day by urban dwellers. Rice constitutes the main dish which is complimented with other protein sources such as white meats (poultry, fish, and goats), peanuts and beans. Generally not many vegetables are eaten, though this varies by ethnic group and seasonality. Not much more is known about rice except that "a meal is not a meal unless it contains rice, and lots of it".

Actual total rice consumption and per capita consumption are not known with any degree of certainty and reliability. This is the reason why active debates are going on between different institutions which rely on this type of information for policy formulation, planning and implementation.

The current situation and positions taken in regard to this basic issue are summarized as follows:

GOGB: First, the Government bases its annual rice consumption needs on a theoretical need for energy requirements, which calls for 300 grams per day per person or 110 kg of rice per person per year. ¹ The government's position is that since this theoretical number does not account for the ethnic and regional differences, and since rice is the main staple commodity in the country, this base must be taken as a sub-estimation of real consumption.

Donor Agencies: Recently, USAID sponsored research into the issue of per capita rice consumption. The findings tend to indicate lower per capita consumption numbers than those used by the government, ranging from 96 to 100 kg per person per year, depending on assumptions taken. ²

¹Estimation de Deficit Ceralier en 1988 et Requete D'assistance Introduite aupres de la Communauté Internationale, Republique de Guinee-Bissau; Ministère du Plan, Bissau, Decembre, 1987.

²1988/89 Food Needs Assessment for Guinea Bissau, by Jeffry Marzilli, July 19, 1989.

Other sources: Another source estimates a real per capita consumption of 180 kg per person per year, and concludes that the deficit for 1987 was closer to 30,000 tons.³

The implications for policy formulation, planning and development are obvious, depending on which source is taken as the country's true consumption level. Marzilli's research would indicate a situation of relative self-sufficiency for the country, where rice imports or national rice are (re)-exported to neighboring countries, thus balancing the food supply and utilization equation. The GOGB figure of 110 kg per person per year, being a theoretical number does not have any merit for policy analysis or planning. However, if assumed to be true, then this situation would result in a deficit of around 12,000 tons, which would not coincide with current levels of imports, unless the difference is re-exported. Finally, a per capita consumption of 180 kg per person per year would tend to support the current levels of imports but would have to negate the apparent rice exports to neighboring countries, an assumption not supported by market evidence.

In view of this situation, the team was assisted by the Instituto Nacional de Estudos e Pesquisa (INEP) to undertake a preliminary survey Bissau, to ascertain per capita rice consumption in the center of the city, nearby suburbs, and more outlying suburbs. The results of this effort cannot be representative of the country, but provide a good idea about rice consumption in the capital city and surrounding area. Also, the team was anxious to learn more about the apparently important "intrafamilial" market for rice. A total of 100 interviews were completed within three zones, covering 693 persons in 23 barrios (see Annex 2). Objectives, assumptions and results are summarized as follows:

Objectives and Assumptions:

To ascertain the daily per capita rice consumption of persons surveyed.

To find out the number of families which have rural family members who provide them with gifts of rice during the year. It seems that this is a very important informal market channel for rice in the nation.

Children less than 10 years old were assumed to represent 1/2 adult.

Results:

According to survey results, average per capita rice consumption in Bissau is 0.51 kg per day, or the equivalent of 186.15 kg per person per year.

If this amount is multiplied by an adjusted population base (to reflect the proportion less than 10 years old), then the national annual requirements would be in the vicinity of 170,327 tons.⁴

³Etude de la Filiere Riz en Guinee-Bissau, by E. Penot and J.S. Canals, June 1989, ADRA/DEPA.

⁴Adjustment factor is: $((1,000,000 \cdot .17) / 2 + (1,000,000) \cdot .83) \cdot 186.15$

A total of 67% of the families living in Bissau City have rural family members who send them rice. Of this amount, some 60% receive such rice as a form of regular food assistance.

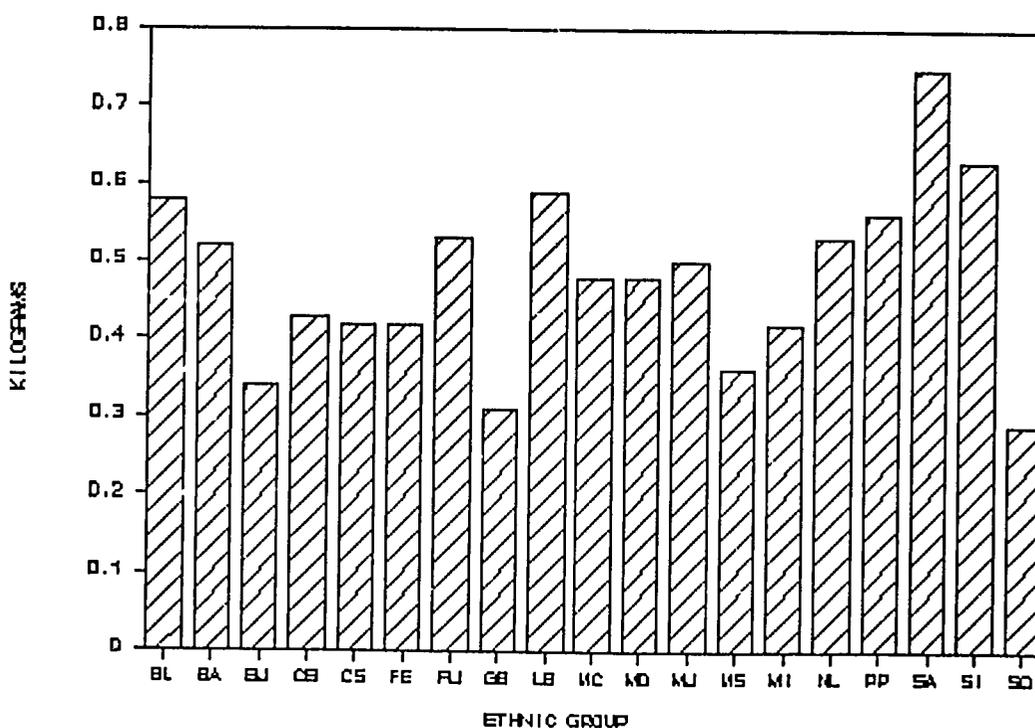
Families surveyed spend an average of GP 5,775 per day on food, or the equivalent of GP 173,250 per month for basic food items. If the low salary levels of public officials are taken into account, and the fact that there is an average of 7 persons per family, of which only two earn an income, then the precarious economic situation of an average family whose income is only GP 64,400 per month becomes very evident.

The results of the survey by ethnic group are summarized in Figure II-1. Of the 19 ethnic groups surveyed, a total of 9 consume more than the average of .51 kg of rice per day. These include Balanta, Beafada, Fula, Libanesa, Manjaca, Nalu, Papel, Saraculé, and Siriana.

FIGURE II-1

AVERAGE DAILY PER CAPITA RICE CONSUMPTION BY ETHNIC GROUP IN BISSAU CITY

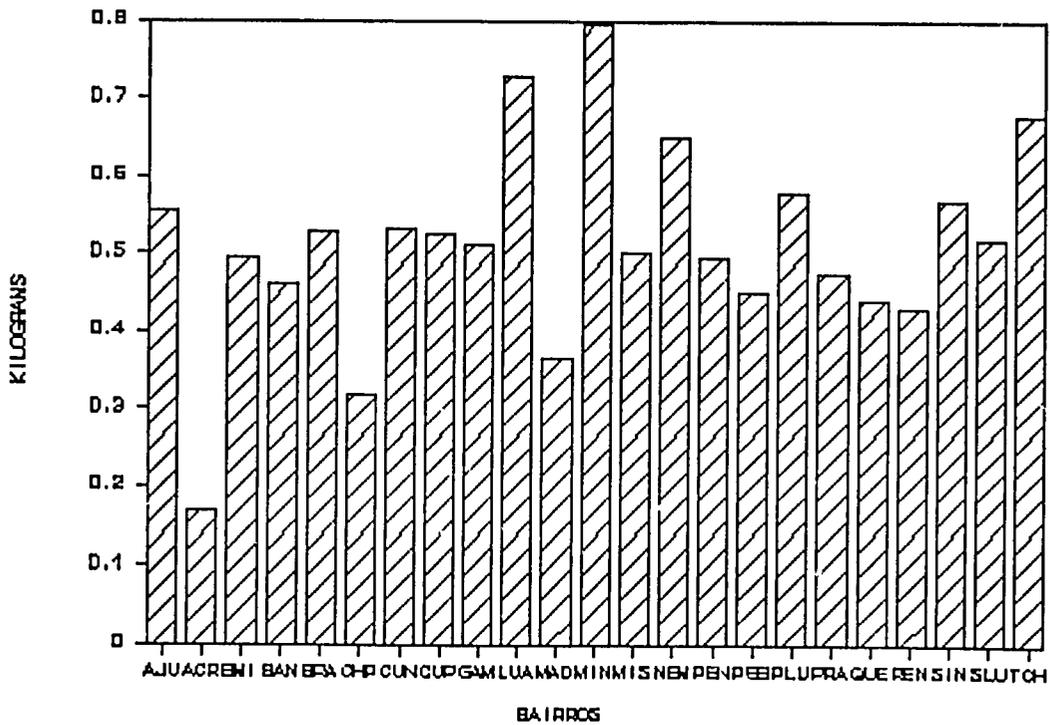
November 1989



Source: INEP survey, November 1989

A summary analysis of the same survey by "bairro" or suburb is contained in Figure II-2. Over 50% of those bairros which consumed more than the average amount of rice are so called "intermediate" bairros, which are suburbs situated around the central part of the city. Only 9% of the outlying bairros consumed more than the average amount. Finally, within the central part of the city, in spite of its extreme ethnic mix, a lower consumption level was observed of 0.48 kg per person per day.

FIGURE II-2
 AVERAGE DAILY RICE CONSUMPTION BY BAIRRO
 November 1989



Source: INEP survey, November 1989

Precise total and per capita rice consumption information is one of the critical elements missing in the analysis and formulation of national food policies and market support efforts being undertaken. To be of any use, this process must, above all take into consideration and account for the reasons why per capita consumption varies significantly from one ethnic group to another, by income levels, rural-urban differentiation, regional differences, intra-seasonal demand, and shifts in labor requirements in rural areas. While the weighted

result of all these factors is essential for sound discussion of policy issues at the macro or national level, understanding those detailed reasons which explain these marked differences are critical to assess potential impact of policy options and strategies on the different ethnic groups, income levels, regions, and rural-urban inhabitants.

For example, during periods of high labor intensity, a Balanta (ethnic group) rice farmer will consume 1 kg of rice per day, in order to satisfy the daily caloric requirements. This will decline later in the season when labor requirements are reduced. Also, many rural inhabitants have alternative food substitutes depending on the season. The distinction and impact of rural-urban rice consumption is perhaps even more important. While in the rural areas rice is also consumed for breakfast, in the urban centers there is a tendency to completely substitute bread for rice during that meal. How is this tendency growing, at what rate?

2. Industrial utilization

The only verified industrial utilization for rice is beer manufacturing by the small national factory at Bissau (CICER). According to information obtained from its Commercial Director, very small amounts of imported rice are being used. For technical and financial reasons, its use of rice is not likely to increase in the near future. The factory used 27 tons in 1988 and 45 in 1989. These amounts are too small to be significant from a marketing point of view.

3. Rice exports

In a country which imports some 39,000 tons of rice per year, it might seem unrealistic to discuss rice exports. Nevertheless, information obtained from visits to São Domingo and Farim do indicate that rice is, and always has been traded across the border to Senegal. Such trade is apparently done to obtain needed hard currency such as CAF, on a barter basis for goods not available in the country, to obtain cashews for export purposes, or simply as a straight commercial transaction where GB is used as an intermediate shipping point to transfer rice to outlying areas in Senegal. The same indications were found in the South where rice is traded with Guinea-Conakry.

Another clear indication of rice exports is contained in a recent study by Marzilli, who analyzed the issue of rice consumption via a food balance sheet approach.⁵ If per capita rice consumption is as low as 96 to 100 kg per year per person, then rice exports to neighboring countries is happening, and is about 27% of net production, with the net deficit being balanced through imports.

There is no question that rice is being traded across the border with neighboring countries for the reasons stated above. It is also quite possible that such trade may be declining due to the macroeconomic changes taking place in GB such as the peso devaluation and realistic foreign exchange rates, accompanied by increasingly higher national rice prices.

⁵ Marzilli

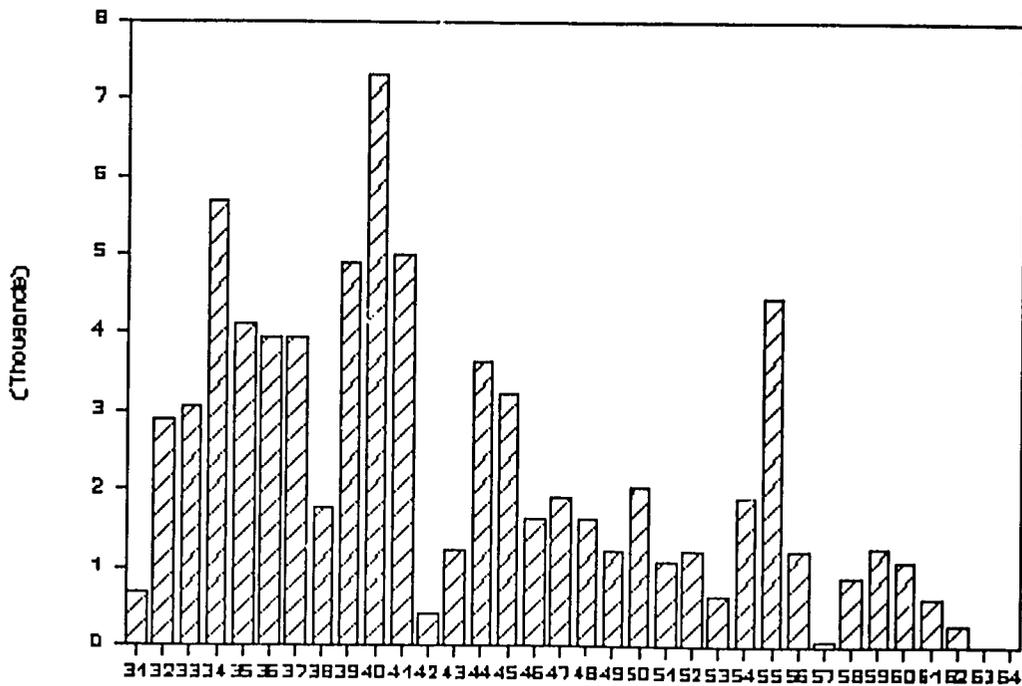
Precise information on volumes, flows, prices, seasonality, participants, and other related information is another of the critical elements missing in current policy analysis and market support efforts being undertaken. Regional rice trade is, no doubt a very critical component of the whole rice marketing system in GB and for the sake of sound policy analysis, formulation, and market development efforts, this issue should be clarified as soon as possible.

Figure II-3 contains a historical series of rice exports from 1931 through 1962. The time series can be broken down into two definite periods, namely pre world war II and pre war of independence. Exports increased gradually before the second world war and peaked at 7,300 tons in 1940. Since then, they continuously declined and ceased in 1963, at the onset of the war of independence. No rice exports have been registered since that year.

These historical figures are sometimes taken as proof that Guinea-Bissau has the capacity to produce rice above national requirements and regain its position as a rice exporting nation in the near future. While the policy reforms have, no doubt reinvigorated rice production in the country, readers are cautioned in making these direct comparisons. Rice exports took place under very different economic, socio/political, and international trade environments. Any future export potential should be based on today's relevant internal production and marketing factors, and international trade conditions.

FIGURE II-3

RICE EXPORTS (Tons)



Source: Annex VIII

4. Seed use

The quantity of seed being used per ha planted varies, depending on the type of planting method used. Two types are currently being used, namely broadcasting and transplanting.

Direct broadcasting: With direct broadcasting rice seeds are scattered by hand directly on the field, and raked into the soil. This type of planting is used for up-land rice (pam-pam) and in bas fonds which have low water levels. Approximately 80 to 100 kg of rice seed is used per ha.

Transplanting: This planting system requires the set up of a nursery, where rice is germinated and grown to a specific state before it is manually transplanted to the production fields. Bas fonds with "plenty" of water and mangrove rice are planted in this manner. This seeding method requires approximately 50 to 70 kg of seed per ha.

As with previous utilization variables, these are approximations and not numbers based on actual surveys. The need to verify these seeding rates, by system and region is another important aspect as far as policy analysis and formulation is concerned. A small reduction or increase in these numbers can be translated into different production costs, volumes, and farm incomes.

5. Working capital use

The use of rice as working capital is understood to include all the recurrent costs production that a monoculture such as rice must pay with its own rice in order to allow it to maintain and perhaps increase the production base utilized.

In the case of Balanta rice production the use of rice as working capital is critical for its continuation and survival. This is based on the unique characteristics of this rice production system, which is 100% labor based. During certain cultivation periods such as land preparation and planting all available labor is brought into action, and in order to make best use of the limited time available, farmers form assistance groups, which work on a given farmers' field for a few days and move on to another farmers' field, and so on. Such mutual assistance is paid in kind, that is, food and other consumer goods. Rice, which is the most common method of payment is offered three times per day to those helping out. Daily consumptions is around 1 kg per person per day.

Considering the lack of labor, the many fields to be cultivated, and the intense competition for labor during certain peak demand periods, the work groups tend to migrate to those farmers who are "rich", that is those who have plenty of land, and therefore rice, as well as other consumer goods such as tobacco and rum for payment in-kind.

A certain equilibrium between "rich" farmers and those who did not have sufficient land and therefore rice for working capital purposes was provided by the "Celeiros" during the colonial period. Celeiros was the name given to a public program which was operated through establishments located in surplus rice producing areas, and whose principal function was to provide credit to undercapitalized rice farmers in the form of seed, as well as "working capital" to finance the required working groups.

One of the major causes which led to the reduction of the needed "working capital" and therefore in Balanta rice production in the nation, was the reduction and eventual disappearance of the Celeiros establishments, between 1975 and 1985. From then on rice farmers had nothing to fall back on when faced with negative production factors such as lack of rain, freezing of rice prices by the government, increasingly unfavorable bartering conditions, etc.⁶

During the decade in question, the combination of fixed rice prices and increasingly higher prices for consumer goods, forced Balanta rice producers to sell increasingly higher quantities of rice to obtain needed consumer goods. As a consequence the number of farmers whose working capital no longer was sufficient to pay for the working groups increased. As the production base declined, rice production failed to keep pace with demand, leading to increasingly higher levels of imports.

In view of the liberalization process, which among other things brought about a free market under which the bartering conditions farmers face are improving, a reinstatement of the credit function which the Celeiros used to undertake, might assist rice farmers not only in recuperating their working capital, but also free them from the source-binding conditions associated with borrowing from a limited number of merchants.

6. Bartering

Rice, because of its "abundance" and universal use (and therefore acceptance) in the country, embodies an intrinsic value which facilitates its use for bartering purposes. Thus rice is commonly used to trade for just about any other agricultural commodity, consumer good, and capital input.

Where rice takes on a more important aspect in the bartering process is in the Balanta groups, which depend on rice monoculture for their subsistence. Since these groups do not have any other means of generating income, rice is the only means they have to obtain agricultural inputs, consumer goods, and capital inputs. This situation is reinforced by the lack or absence of money within the interior of the tabanca or village, which encourages Balanta people to undertake their buying and selling based on rice.

7. Losses

There is no scientific information on field and post-harvest losses of rice in GB. The estimate of 15 percent (GOGB uses 15% for seed use and losses) used in calculating net production is just that, an estimate which is very commonly used by FAO when no other basis exist for such utilization.

In qualitative and very tentative terms the following summary is provided on field and post-harvest losses.

⁶Causas da Queda de Produção de Arroz na Guinéa-Bissau, por Carlos Rui Ribeiro, INEP, Bissau, April 1988.

Weeds: Weeds are a major reason for reductions in yields during the production phase. Three things are generally done to combat this pest. First, farmers try to plant as soon as possible after the first rains in order to give the rice a better chance to compete with the weeds. Second, the few mechanized farmers let the weeds germinate after the first rains, and plow the field under before planting the rice. Third, weeding is undertaken manually once or twice during the growing period.

Field pests: These are represented by both viral, vertebrates, and invertebrates. Little is known about their impact on field losses and yield reduction. Vertebrate pests include rodents and birds, which might be the most serious type. On the island of Pecixe, rice is frequently attacked by flights of birds. There, as well as in other parts of the country it is very common to use child labor to defend rice fields from bird attacks, in order to insure a harvest. Losses of up to 80% have been reported in past years.

Post-harvest losses: Nothing is documented on post-harvest rice losses. The standard pest would include birds, rodents, insects, and fungi. Completely opposite accounts were collected during the field trips, ranging from hardly any loss to considerably amounts being lost due to rodents.

At present, the Crop Protection Service (CPS) of the Ministry of Rural Development and Agriculture provides pest management services to farmers. This service is a limited response action to combat weeds and outbreaks of field insect infestations. The service is in the process of upgrading its staff (three additional Masters) and resources, and to expand its activities into the postharvest area. Mr. Mustafa Cassama of CPS is pursuing an entomology Masters degree in stored grain insects at KSU. He is expected to return to the Service in the summer of 1991.

The only known grain storage project was implemented in the early 1980's in Zone I (Cacheu area). A total of 56 small silos were built as demonstration units. While farmer response was apparently positive no follow-up was undertaken once the project terminated.⁷ The project did not look into postharvest losses.

A small percentage change in the quantity assumed to be lost in the fields and after the harvest, before net production is calculated can have a significant impact on the rice position of the country, and therefore on policy analysis, conclusions, and formulation. Over the next 5 years, the Crop Protection Service could be supported to conduct some inexpensive but vital research into losses to appropriately adjust this 5% total loss assumption being used today. Ways and means to reduce losses would also contribute to total national yield and availability of rice.

⁷Redução de Perdas Alimentares depois da Colheita na Guinéa-Bissau, Relatório dum Projecto, Redactor: Idriam N. Resnick, The Economic Development Bureau, INC., New Haven, CT., 1982.

B. Rice Sources

Today, rice sources for Guinea Bissau constitute its own production of paddy and required rice imports to balance an apparent net national deficit in production. The situation of these two sources shifted from a position of surplus and no imports in 1964 to that of a deficit and import position which has existed and expanded ever since. Exports were undertaken regularly throughout the colonial period up to 1964, when they stopped due to the war of independence which broke out in 1963.⁸

Following is a brief review of rice production systems, global and regional production, imports, and net availability. Also, relevant issues in term of policy analysis, formulation, and market development are highlighted.

1. Rice production systems

There are three very distinct rice production system in Guinea Bissau, which according to the geographical location may also have some subsystems as well.

a. Irrigated rice (bolanhas)

Bolanhas are low lying land areas along river valleys which are dedicated to rice production. Individual plots of land used for rice production vary in size, according to the elevation in relation to the river and water level. There are two types of river valleys which provide land for irrigated rice production. Their general location is shown in Figure II-3 which traces the demarcation line between the two types.

ria: are river valleys in which large areas, due to the tidal action are covered with salt water twice per day; inorganic material is deposited forming a muddy type of soil (lama preta) where mangroves propagate.

rio: are river valleys in the interior of the country (and neighboring countries) in which sweet river water dominates; water level depends on the seasons, that is dry or wet season; these valleys are commonly found in the many branches of the Geba and Corubal rivers.

Therefore, the bolanhas are of two types, depending on whether the land was originally covered with salt or sweet water. In layman's language the first one is commonly known as "bolanha" or salt water bolanha, and the second as "bas-fond".

Salt water bolanhas: These are land areas which have been recovered from salt water. All ethnic groups along the coast and salt-water rivers use (ria) this production technique (Balantas, Felupes, Manjacos, Papéis, Nalús, Bijagós).

⁸E. Penot and J.S. Canals

Ethnic groups living in the interior of the country such as Fulas and Mandingas dedicate themselves to this type of rice production, which is mostly done by females. Their production techniques are rather undeveloped, as revealed by the low yields compared with the potential, using other techniques.

Several projects have tried to improve the current production techniques used in bas-fonds by improving water utilization through land leveling and levee construction, and through the introduction of seed improvement and improved cultivation methods.

It is important to distinguish three types of Bas-fond subsystems. First, small bas-fond with an area no larger than 40 ha, with an average of 15 to 20 ha; second, medium bas-fond with an area ranging from 40 to 80 ha; and large bas-fond with areas exceeding 80 ha. These large bas-fond are quite often confused with low lying land areas known as "lalas", which are covered with bushes and trees, are periodically flooded, have bad natural drainage, and are often very swampy.

b. Dryland rice (pam-pam or upland rice)

This type of rice production is done without irrigation, therefore the name. It is generally undertaken on higher grounds, after the vegetation has been slashed and burned. Since this production takes place in normally poor soils, it is the only type of rice production which is not intensive. Herein lies the second characteristic of this system, namely shifting agriculture - one to two years of rice cultivation followed by a rotation with other crops such as peanuts and milo, and then fallow.

Dryland rice production is undertaken in the interior as well as along the coast. It also represents another alternative for ethnic groups living along the coast, and who have not been able to regain a balanced production with the bolanha system. At present this type of production represents a very important crop for the Manjacos. The ethnic groups closest associated with this production system are the Bijagós, Beafadas, and Felupes.

c. Pump-irrigated rice

The objective of this production system is to grow rice during the dry season, when production of alternative crops is either limited or impossible. Water pumps are used to pump water from the rivers to nearby rice fields which have been prepared with irrigation channels, and sometimes leveling.

This system is relatively new, and was introduced by DEPA (Departamento de Pesquisa Agrícola) in the area of Contuboel, in the Bay of the Geba river. According to technical personnel from DEPA, the area covered under pump irrigation does not exceed 140 ha, and is unlikely to increase.

The Chinese project at Cantabará has also developed 200 ha of rice production of which 60 are being double cropped with pump irrigation during the dry season.

This project has demonstrated that yields are some 30% higher during the dry season, when pump irrigation is used. The reasons given were better water control and less problems with weeds.

These two are apparently the only pump irrigated rice production systems in the country. Also, the economic feasibility of this type of production has not yet been analyzed with any degree of confidence.

2. Production trends

a. Area, volumes and yields

According to available information, area under rice cultivation has varied considerably since 1953, when the first agricultural census was taken. These historical shifts are shown in Table II-1 (see Annex 9 for time series data on paddy production).

As evidenced in Table II-1 there has been an apparent enormous reduction in land area under cultivation between 1953 and 1988. In 1978, only 73% of the area under cultivation in 1953 was being utilized, while by 1988 this proportion had been reduced to only 24%, if recovered rice land area is not included.

TABLE II-1

TOTAL LAND UNDER CULTIVATION AND UNDER RICE CULTIVATION

	1953 Census	1978 Estimate	1989/90 Census 1/
Total Area Cultivated (ha)	410,801	300,000	98,079
Total Area under Rice (ha)	130,306	122,000	52,464
Paddy Production (Tons)	100,297	93,000	105,888
Calculated paddy yields (Tons/ha)	.770	.762	2.02

1/ Source: GAPLA/MRDA

Land area under rice cultivation shows the same trend. In 1978 about 93.6% of the 1953 area under rice cultivation was still being used. Ten years later this proportion had been reduced to 40%, not including land area being recovered by the different projects.

When paddy production volumes are now related to these shifts in area under rice cultivation, a very puzzling relationship is established. Between 1953, production volumes decreased by 7.2% from 100,000 to 93,000 tons. On the other hand, when production levels between 1953 and 1988 are compared, a 5.6% increase is apparent, a highly suspect number, when only 40% of the 1953 area under rice cultivation was still in use (130,306 down to 52,464).

The same type of historical comparison can be done with the calculated yields (tons/ha) at the bottom of Table II-1. These yields remained very constant between 1953 and 1978 at about 770 kg per ha. However, by 1989 these calculated yields increased by over 162% to 2.02 tons per ha, an increase of roughly 15% per year between 1978 and 1989. What kind of significant changes in agricultural inputs, production practices, and harvesting techniques took place which allowed yields to increase by such magnitudes?

Unless these inconsistencies in area, production, and yields can be explained or rationalized, these base numbers are useless for time series analysis. Furthermore, since the historical time series available from 1953 through 1987 is incompatible with the results of the new area frame sampling method being introduced at the MOP for agricultural statistics, any projection based on that base is likely to be very unreliable.

The results of this first effort will be available by March of 1990. A careful analysis of total and regional results with the historical time series should be undertaken. The obvious discrepancies that are likely to come out should be used to strengthen current efforts under FAO project to improve the process of area frame sampling, rather than to argue about "right" and "wrong". This effort would set the stage for an improved data bank for sound statistical analysis of paddy production (and other agricultural commodities), in support of policy analysis and planning.

b. Regional production

Rice is produced throughout the nation under the different systems of production previously reviewed. Table II-2 contains the regional production numbers for 1989/90 crop cycle.

TABLE II-2

ESTIMATED REGIONAL RICE PRODUCTION FOR 1989/90

Region	Area (Ha)	Production (Tons)
-----	-----	-----
Biombo	3,345	7,724
Cacheu	11,651	20,387
Oio	9,774	21,678
Bafata	4,893	10,365
Gabu	3,839	9,186
Quinara	2,893	5,344
Tombali	5,837	10,430
Bolama	3,797	7,469
Bas-fonds repiqués		
15% du total	3,436	7,038
Secteur Amenagé	3,000	6,267
	-----	-----
Total	52,464	105,888

Source: Annex IX

These numbers differ, sometimes considerably (see Annex IX) from the historical series published by the Ministry of Agriculture through 1987. These differences should not come as a surprise since both series are generated from totally different bases and assumptions. Perhaps the most surprising changes are the lower production volumes registered in the regions of Quínara and Tombali, the two known "surplus" regions in the country. Both regions dropped from an estimated production of over 20,000 tons each to 5,000 in Quínara and 10,000 in Tombali.

At this stage what these new estimates should generate is a sound analysis and discussion of potential scenarios for regional production and consumption, as well as inter-regional distribution of paddy and rice. Comparing such regional scenarios with marketing (volumes, prices, processing rates, transported quantities, ect.) and summary figures (total consumption, imports, exports, storage) for the nation can be useful in revealing new trends and regional changes early enough to begin with the first steps of predictive efforts in this area.

As the new statistical base (production and marketing) is improved in the next few years this type of analytical efforts to assess the current rice situation and estimate short- and medium-term outlooks is an essential component of the public sector role in support of private sector development in this area.

Following are some very qualitative assessments of perceived "deficit" and "surplus" regions in the country. These should be taken as a starting point for future follow-up and in depth analysis. For example, during the 1976/77 agricultural year, which represents a year of low production levels, a total of 7,793 tons of domestically produced rice was marketed. This total amount came from the regions of Tombali and Quínara, which contributed 84.7% and 14.4%, respectively. This implies that except for these two regions no other region in the country produced excess rice for marketing purposes.

Nevertheless, within deficit regions there are areas which are self-sufficient and areas which have chronic deficits. The relative degree of self-sufficiency is, however very precarious, depending on the amount and pattern of annual rainfall. During years of above average precipitation relative self-sufficiency can be achieved, while during normal or poor years deficit situations are the norm.

Chronic deficit regions include the city of Bissau and surrounding area; Gabú and Bafatá, which include all of the Eastern area of the country; the regions of Oio and Cacheu, as well as the Archipelago of Bijagós. Subareas within deficit regions which enjoy a degree of relative self-sufficiency include:

Cacheu Region:	the Felupe villages of Ilia and Djobel
Oio Region:	the Nharca and Mansoa sectors
Bafatá Region:	the villages of Sambacunda and Waquilara which undertake double cropping under the DEPA project, and the villages associated with the Chinese project at Cantabará

Equally important, the surplus region in the South of the country seems to contain small deficit pockets as well, such as the case of Cacine, in Tombali which apparently has a chronic deficit of rice throughout the year.

During the last three years, favorable climatic conditions and changes in the socio/economic environment, have combined to produce very favorable conditions for increasing rice production, as evidenced specially in the South. For example, during the 1988/89 crop year the sector of Catió (excluding Bedanda) shipped to other parts of the country a total of 293,808 kg of paddy and 237,599 kg of milled rice, which is the equivalent of 430 tons of milled rice.⁹

3. Rice imports

Rice imports for 1960 through 1989 are summarized in Figure II-4. Three distinct time periods can be associated with the level of imports. First, during the war of independence (1962-1974), rice imports climbed from under 6,000 tons in 1962 to 30,000 tons in 1974. This fivefold increase in imports reflects the continuous deterioration in domestic production as war efforts resulted in the destruction of transport infrastructure and production base, and migration of farmers from the South.

During the second time period, between 1974 and the liberalization process of 1986, only two parastatal companies were allowed to import rice, namely Armazéns do Povo (AP) and SOCOMIN. As is clearly evident, the period of state monopoly is characterized by a tremendous irregularity in import levels from year to year. For example, in 1978 a total of 28,107 tons were imported, while in 1979 only 13,094 tons were imported. Import levels dropped from 33,045 tons in 1981 to 16,782 tons in 1982, a 50% drop.

The third time period starts with the market liberalization process in 1986. Since then, import levels have shown less instability, however with a tendency to increase annually. While these increasing import levels are a direct result of the market liberalization process, the specific and direct reasons are more difficult to point-out. A workable hypothesis is provided by the market linkage between cashews and rice and the potential for regional trade with Senegal and Guinea-Conackry.

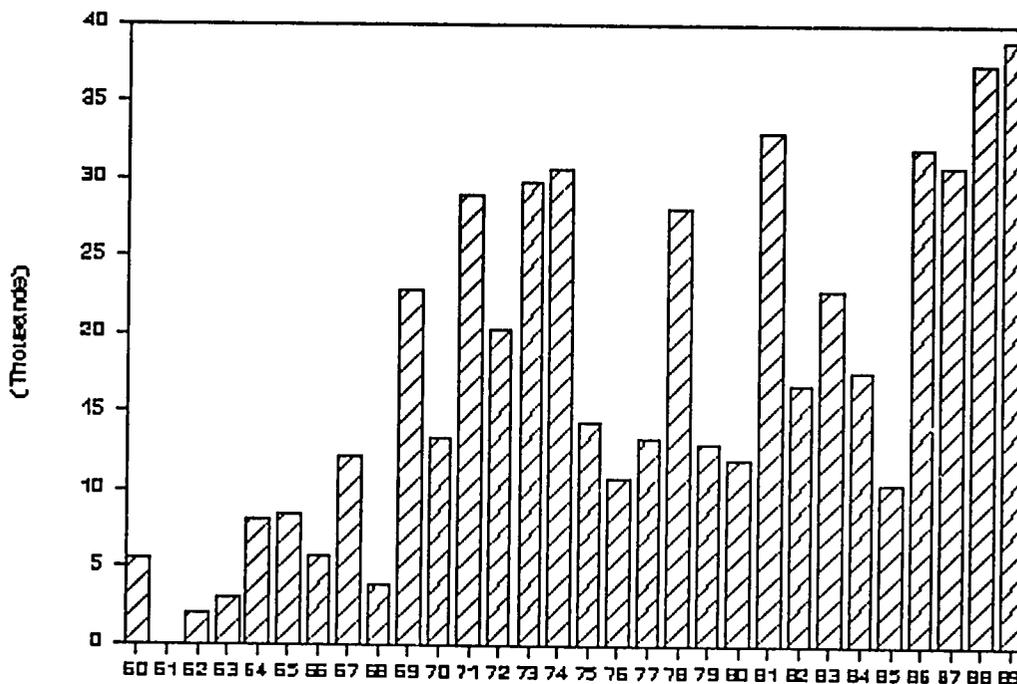
Since liberalization the buying ratio for cashews has dropped from 2 kg of cashews per 1 kg of rice to 1:1. This means that the same amount of cashews must now be bought with twice the amount of rice. Furthermore, since cashew exports have nearly doubled since 1986, additional rice is also needed to purchase these additional cashew quantities.

It is also quite likely that Guinea-Bissau serves as a transshipment point for rice being hauled to Senegal. During both country visits, application of the price-site model indicated positive returns in rice exports (or re-exports) to Senegal. While all assumptions used could not be validated, conversations with private merchants tended to confirm this market possibility.

⁹While similar information exists for all sectors in the South, the team was unable to obtain it.

FIGURE II-5

RICE IMPORTS



Source: Annex VIII

Import patterns for the last three years are contained in Table II-3. Generally these import patterns correspond to the rice crop year of the nation. During the first two quarters, immediately after the rice harvest smaller amounts of rice are imported, and as the season progresses, imported amounts increase to compensate increasingly short supplies of domestic rice.

Another reason for this cycle is given by the market linkage between rice and cashews, and the associated foreign exchange requirements and regulations. Cashews are bought from May through August, and exported as soon as the international trade agreements and ocean transportation can be arranged. The foreign exchange earned is deposited with the Central Bank. Exporters are entitled to 50 percent of their foreign exchange earnings in hard currency, and the rest in GP at the official exchange rate. The cycle starts again with imports of rice for the next lean season, as well as for storage in preparation for the next cashew "campaign".

This import-export cycle would result in a strong demand for hard currency during the third and fourth quarter, required to finance over 50% of total rice imports. Any slippage in availability or disbursement by the Central Bank will increase the cost of these market and trade operations.

TABLE II-3

RICE IMPORT PATTERNS

Quarter	1987	1988	1989	
1st	784	9,173	6,418	
2nd	8,570	7,578	7,586	
3rd	5,044 *	9,572	12,996	
4th	16,455	11,167	12,000	**
	-----	-----	-----	
Total	30,854	37,489	39,000	

 Source: National Bank of Guinea Bissau; Department of Economic Studies

Notes:

- * This number does not coincide with custom's information
- ** According to customs, only a value of US\$2.124 million was imported which corresponds to 7,686 tons of rice. MOC authorized an import quantity of 35,500 tons before September 1989, and projected a volume of imports of between 39,000 and 40,000 tons.

C. Net Production, Imports and Per Capita Availability

Consumption availability of domestic rice is the net quantity available for utilization after seed use, losses and milling. Assuming 10% use for seed, 5% for losses during the harvest, transport and storage, and a milling yield of 65%, then about 55% of the paddy harvest would be left as clean milled rice for consumption.

Total consumption availability numbers contained in Table II-4 are obtained by applying these proportions to the historical production numbers, adding net imports to that base, and dividing by the population. In essence an index of availability is thus generated to see how the country's production is keeping up with population growth.

The overall consequences of previous macro policies and central market control can be traced as follows. As availability of domestic rice declined from 102.4 kg per person per year in 1953 to 61.9 kg by 1989, rice imports mushroomed from practically zero to approximately 40,000 tons per year. In 1953 the country seemed practically "self-sufficient" in rice (98% self-sufficient), with a total per capita availability of 105 kg. By 1989, total per capita availability of rice had remained practically unchanged at 103 kg per head per year, but at the cost of imports and a reduced self-sufficiency ratio (60% self-sufficient).

The cost to the country have been very significant in terms of (1) forgone rural income generation and development, (2) foreign exchange expended on rice imports, (3) loss on potential rice exports, and (4) public expenditures required to manage and control the public system in charge.

TABLE II-4

HISTORICAL PER CAPITA CONSUMPTION AVAILABILITY FOR RICE

(Tons)

Year	Net Availability of Domestic Rice	Net Imports	Total Availability	Per Capita Availability (Kg/Cap/Year)
1953	54,160	1,350	55,510	104.9 (1953 Pop.)
1978	50,220	28,107	78,327	102.0 (1979 Pop.)
1989	58,503	39,000	97,503	103.2 (1989 Pop.)

Source: SCET-INTERNACIONAL 1978; Recenseamento Agrícola de 1989

Notes:

1. Net Imports: Refers to imports less exports; for 1953 imports are given as 2,000 tons and exports as 650 tons for a net import of 1,350 tons.
2. 1953 population = 529,000 (FAO)
1979 population = 767,742 Anuário Estatístico, 1987
1989 population = (1987 population = 906,612)*(1.021)*(1.021)

D. Future Production Potential

Guinea Bissau seemed to have the ecological and climatic conditions necessary to produce sufficient rice for its own consumption as well as for exports - as indicated by past history. ¹⁰ While these two factors may well hold true today, it is the underlying changes in socio/economic and policy conditions which might return the country to a net export position.

In recent history, self-sufficiency has not been achieved due to social, policy, and climatic reasons, such as the war of independence and associate destruction of infrastructure, socio/economic policies utilized, and variations in the weather patterns, all of which discouraged production.

The economic and market liberalization process has, through price increases and availability of merchandise, incentivated rice producers in general, and has set the stage for the a potentially significant historical change in rice production. This is the first time in recent history of the country that purchase and selling prices have been liberalized, and therefore set by the market place. Devaluation of the Guinean Peso and market determined exchange

¹⁰Between 1920 and 1964, GB exported 75,482.8 tons of rice to Portugal; see Annex VIII

rate have put upward pressure on paddy and rice prices. This price trend has been strengthened by the keen competition among merchants at all levels. This combination has created enormous incentives for rice producers to respond by increasing production levels as fast as their resources allow.

Subsistence farmers in the surplus region of the country are, with their own resources, making tremendous efforts to regain additional production area from land affected by tidal actions so that additional ha will enter production in the next 3 to 5 years. This positive production trend will be further enhanced by the different rice projects being implemented in the South. In the region of Tombali and Quinara a total of 2,085 ha of land was reclaimed for rice production by the Departamento de Hidraulica Agricola e Solos (DHAS) between 1982 and 1983. According to plans, this Departamento of the Ministério do Desenvolvimento Rural e Agricultura will have rehabilitated another 5,000 ha in the next 4 years, by building additional dams to prevent saltwater penetration. If this area is capable of producing 2.5 tons per ha, then another 12,000 tons of paddy will be produced above current levels. This amount is, however not likely to be fully marketed since some of it will be retained for on-farm utilization as well.

This is the first time that farmers have decided to produce rice for commercial purposes only, as exemplified by the ponteiros in the Province of Bafatá, who have organized to produce rice exclusively for marketing purposes; as a corollary, this is also the first time that a sound economic base has been set for mechanized rice production. The first steps of mechanized production in the country have been taken, as demonstrated by the initiatives of the Producers Cooperative of the East Province (CAAPLE).

This new thrust in rice production could make it quite possible that a higher production rate may become noticeable in the Eastern region of the country, specially around Bafatá, all within a very short period of time. These farmers cultivated at least 2,500 ha of paddy during the current crop year, and according to expectations, within 5 years a total of 10,000 are scheduled to be brought into production. If an average yield of 2 tons per ha can be sustained, this would generate another 20,000 tons of paddy for marketing purposes alone.

If these expectations are realized, then the following scenario for rice production and availability is possible. First, a significant change in rice production patterns will take place, specially around Bafatá and in the South. Secondly, over 30,000 tons of additional production could be available for on- and off-farm consumption, which could put the country closer to the point of relative self-sufficiency within the next 5 to 10 years.

If current market and policy conditions continue, such production potential could materialized sooner than expected. Close monitoring and analysis of these trends, both at the production and marketing level would provide policy makers with timely and relevant information required to make sound policy decisions during these critical transition years.

SECTION III

THE RICE MARKETING SYSTEM IN GUINEA-BISSAU

A. Introduction/Overview

1. Analytical framework

Given the important differences in analytical view-points from which economic systems are understood and discussed, some knowledge of the authors' point of view will be helpful in understanding how the observations made during the course of this study were interpreted.

a. Market orientation

The authors' analytical point of view is market-oriented. This implies that our basic hypothesis is that most people are guided by a self-interest that, although modified by cultural constraints, can be used in predicting economic behavior. Thus, when dealing with quantities of commodities, such as rice, in excess of personal and cultural needs, people can be expected to behave in an economically rational fashion. When this hypothesis is rejected by the information we collect through observation, we are stimulated to understand and account for the situation.

As market-oriented economists, our theory is that competitive markets tend to allocate the use of resources within an economy such that public welfare is maximized. In a market economy, public welfare is largely defined by the people through their purchases in the market place. The people in a market economy buy what they desire. This process of "voting with their pesos" directs the use of resources so that societal welfare is maximized. The most important policy conclusion one obtains from our theory is that resource use is best directed by market forces. No other method of directing the use of resources within an economy is more responsive to the demands of the people as expressed through their purchasing power.

With this analytical point of view in mind the reader should expect that the authors will interpret evidence of intense competition as a healthy sign. It also follows that any restriction in the free flow of resources will be interpreted as an impediment to the efficient allocation of resources and the maximization of societal welfare. A fuller explanation of these ideas is contained in Annex III.

b. Economic models used

We will use the structure, conduct, and performance model as a framework for our study. Another model that we will use to explain market areas and the direction of product movements is called the site-price model. Both of these models are discussed in Annex III.

2. Overview of the rice market in Guinea-Bissau

Understanding the details of the rice market in Guinea-Bissau will be easier if the reader has a general idea of the functioning of the market. The purpose of this section is to provide this overview.

a. Use of rice

Although all rice entering the Guinea-Bissau is either eaten locally or exported, it also plays a major role in the local economy as a medium of exchange. Rice is used to supplement the wages of both public and private employees (The use of rice in paying the salaries of public employees was abolished in 1989). It is also used to purchase, through barter transactions, cashew nuts, palm oil nuts, peanuts, honey, and bees wax. Rice enters the market from two sources: imports and local production. The imported rice is generally considered to be of lower quality than the locally produced rice and is used in the major cities and in the rice deficit areas of the country. The major proportion of locally produced rice is consumed in the rice producing areas, although an increasing amount is being transported out of the rice producing areas for use in barter transactions and for direct sale to urban consumers.

b. Pattern of rice movement

Based on estimated production and utilization figures for 1988-89 provided by the Ministry of Planning, Office of Food Security and import data provided by the Ministry of Economic Coordination, Commerce and Tourism, the general flow of rice in Guinea-Bissau can be described as follows. The southern regions of Quinara and Tombali produced a surplus of approximately 16,000 tons of rice (expressed on decorticated basis). Approximately, 3,000 tons of this surplus were transported to Bissau to be milled in the main rice mill and later sold to local wholesalers. Much of the remaining surplus production was probably used in the deficit regions closest to the southern surplus region.

Our site-price model (see Annex III) would predict that this surplus was used in the regions of Bafatá and Gabu because transfer costs to this area are less than to the Bissau area. It is also significant that the estimated deficit in the Bafatá and Gabu regions, 15,600 tons, is of the same order of magnitude as the estimated surplus in the southern surplus regions. These estimates also support the prediction that rice from the southern region tends to be used in the regions of Bafatá and Gabu. Figure III-1 shows the major movements of national rice.

The site-price model suggests that imported rice was most likely used to supply those deficit areas closest to the port of Bissau. This would include the regions of Bolama, Biomo, Cacheu, Oio and the region including Bissau itself. These regions had an estimated deficit of approximately 25,000 tons of rice. Imports of rice into the country totaled approximately 40,000 tons. Figure III-2 provides a graphical representation of the probable pattern of imported rice flows in Guinea-Bissau.

FIGURE III-1
FLOW OF NATIONAL RICE IN
GUINEA-BISSAU

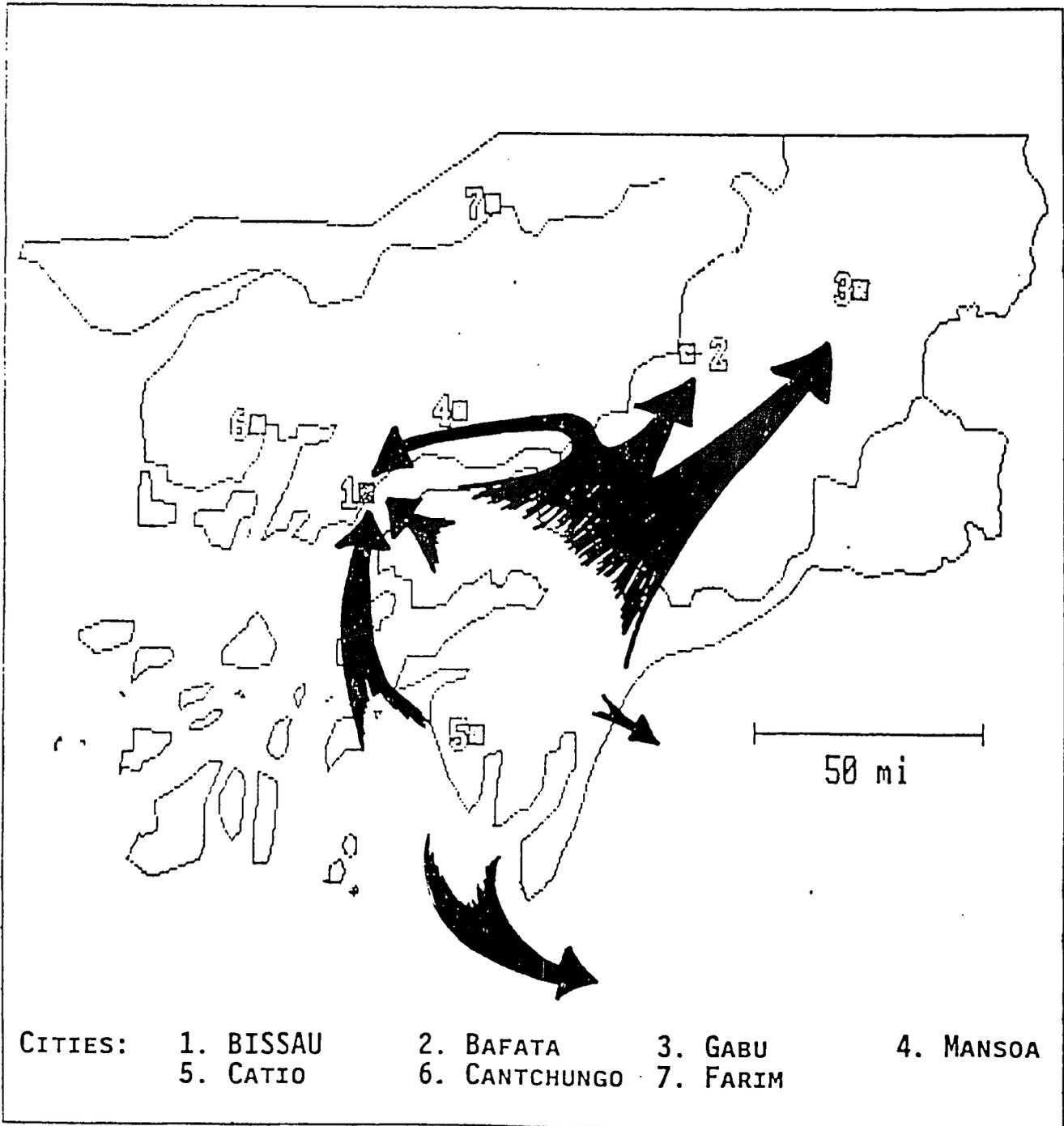
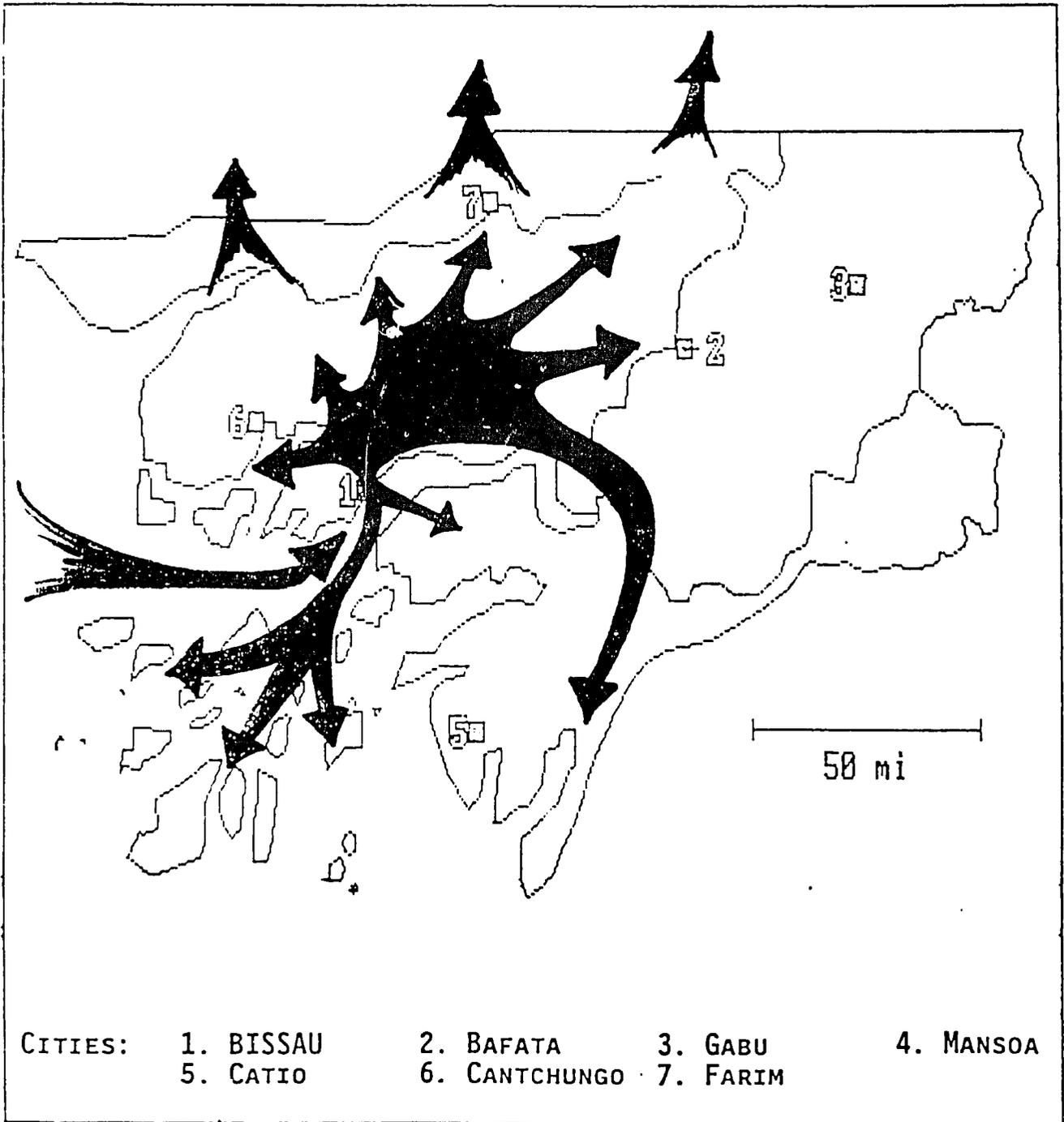


FIGURE III-2
FLOW OF IMPORTED RICE
GUINEA-BISSAU



The utilization of the 16,000 ton difference between the amount imported and the estimated national deficit of approximately 24,000 tons can be explained by three factors: higher than anticipated consumption levels, exports, and storage. Either of these three factors could account for a major proportion of this unexplained difference. Assuming a population of one million people, per capita consumption would have to increase by only 14.5% (from 110kg to 126kg per capita) to account for the total 16,000 tons of rice.

Exporting the difference in 10 or 20-ton-capacity trucks would require 800 to 1600 truck loads. If these were spread over a nine-month period, the exportation would require 3 to six trucks per day, depending on the size truck used. Given the numerous border crossing points, it is possible that a significant proportion of the 16,000 tons in question could be exported without arousing a high degree of attention. The FAO has estimated exports from Guinea-Bissau at up to 25,000 tons per year.

Additional storage or changes in supplies of rice in the marketing channel have been reported to range between a negative 4,000 tons to a positive 10,000 tons over the period 1984-1988.

c. Organization of the rice market

Since 1986, the rice market has been changing from a situation in which publicly owned trading companies dominated the market to the current open market situation. The market is now dominated by six, vertically integrated marketing organizations. For discussion purposes, these organizations are called the "major merchants" or the "big merchants". These terms reflect the fact that, in general, each organization is directed by a single individual. Each organization is organized in a loosely pyramidal form with an administrative unit at the highest level of the organization directing marketing operations at the village level through secondary managers or through direct contact with the village level marketers. The primary business of these organizations is the export of unprocessed cashew nuts. A secondary business of these organizations is the supply of rice to urban consumers. Working with the six major organizations are a small number of small, independent merchants whose trading areas may extend over several villages.

In order to obtain the cashew nuts, the major merchants distribute rice and consumer goods to village level agents who trade directly with the farmers or farmer's representatives. Trade with the farmers is handled primarily through barter. Some rice for this purpose is purchased from local producers although most is imported. Due to the small size of each marketing organization's rice requirements relative to economically sized importation quantities, groups of the marketing organizations cooperate to import a single delivery of rice which is then divided among the group.

In spite of this need to cooperate very closely at the import stage, there appears to be very little cooperation at the village level where the major merchants compete fiercely for the product and for village-level agents. In order to secure a supply of the desired commodity, the major merchants provide their agents with operating capital in the form of trade goods and cash. They also supply their agents with the use of small trucks to assist in the assembly

of the desired commodity. Often these trucks are sold to the agents on barter terms which require the agents to pay for them with commodities. This process has created a marketing network that has connected nearly every village in the country with Bissau, the capital city.

This network appears to have the capability of expanding beyond its focus on rice and cashews to provide marketing services for a much wider range of goods and service. Originally, the larger merchants used the supply of credit to control the supply of commodity. Acceptance of the credit committed the village-level agent to deliver the accumulated commodities to the merchant who provided the credit. There is now evidence that it is becoming more difficult to enforce these types of agreements due to the increased competition among the larger merchants for the village-level agents. More and more village-level agents are gaining higher levels of independence by making agreements with more than one creditor/merchant.

The intense competition at the village level has benefited farmers through increased prices for the commodities they produce and lowered prices for the services and commodities they buy. Prior to the liberalization of the market, cashew producers were paid one kilogram of rice for two kilograms of cashew nuts. During the 1988-89 purchasing season, many farmers received 1.33 kg of rice for two kg of cashew. Later in the season, farmers received 2 kg of rice for 2 kg of cashew. These payments reflect a change in the rice-to-cashew barter ratio from 1/2 to 1/1.5 and finally to 1/1.

The prices rice farmers received for paddy more than doubled, on a current U.S. dollar basis, between 1987 and 1989. Specifically, farmers received approximately 62 GP/kg or .07 \$/kg of paddy at the official exchange rate in 1987. In 1989, farmers received approximately 300 GP/kg or .15 \$/kg of paddy at the official exchange rate.

Farmers often borrow consumer goods or rice from local merchants during the "lean season" and repay at harvest time. In the past, when the number of merchants in an area was very limited, the farmers had little bargaining power with the merchant and often had to repay their debts with commodities valued substantially higher than the value of the commodities they had borrowed. This additional value represented an interest charge. There is evidence that the increased competition among the increased number of village merchants for the farmers' business has resulted in a substantial reduction in this interest charge. In two cases, the authors were told that interest is no longer charged and the merchant views the lending of commodities to farmers as a means of winning their continued business.

In summary, the rice market in Guinea-Bissau appears to be highly competitive and therefore responsive to the needs of the people of Guinea-Bissau. Prices in the local market appear to reflect quite closely those in the international market. This implies that producers inside Guinea-Bissau are receiving price signals that will direct them into areas of production in which they have a comparative advantage in relation to world producers. The admirable performance of the major merchants in creating a marketing network for the assembly of cashew nuts appears to have benefited a substantial proportion of the rural population. Rice prices, on a current peso basis, have increased substantially. The amount

of consumer goods available for sale in the rural areas appears to have increased substantially. The bargaining power of rice farmers vis á vis the merchants they deal with appears to have increased substantially.

B. The Economic Environment

1. Regulatory environment

By mid-1989, the economy of Guinea-Bissau had been largely converted to a market-directed economy. Price controls on all commodities were abolished as were the state monopolies which had dominated the rice market. The state-owned processing firm, SOCOMIN, had been liquidated. Armazens do Povo, the state-owned commodity trading firm, which had dominated the internal and international trade in rice and other commodities, was in the process of being privatized. The right to import and export agricultural commodities had been extended to the private sector under an open general license system under which import and export licenses are automatically granted. International trading firms were being allowed to deal directly with private trading firms. Local, private trading companies were being allowed to deal directly with rice producers. Although the state-owned transportation company, Rodofluvial, continued to operate as a parastatal, official controls on transportation prices had been abolished. The general result of the liberalization policies was a significant upsurge in private enterprise activity.

2. Facilitating functions

a. Government supplied facilities

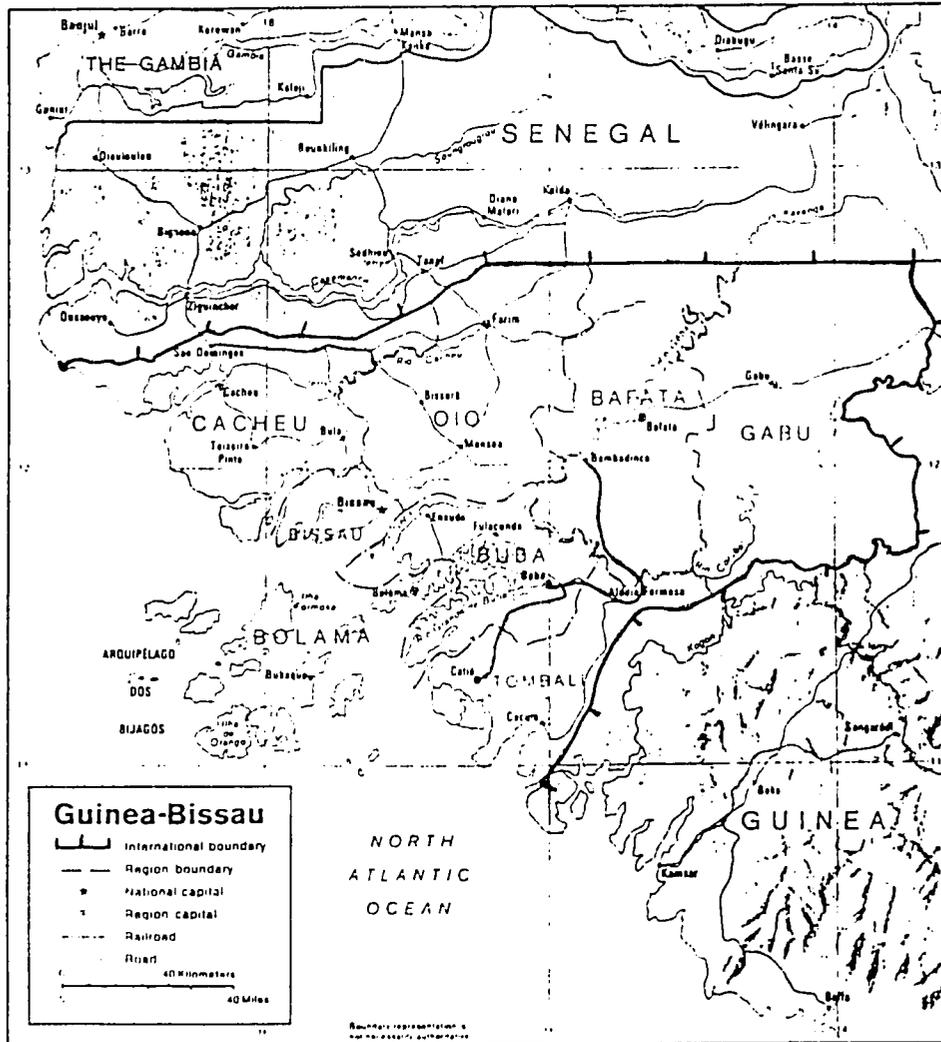
(1) Transportation and Communications

A large portion of the country is connected with all-weather roads in serviceable states of repair and some additional all-weather roads are either being constructed or are being scheduled for construction. However, the major rice producing areas in Tombali and Quinara regions had not yet been connected to the major rice consuming areas via an all-weather road. Consequently, many truck owners refuse to service that market due to the additional damage sustained to their vehicles when working in that area. The roadways under construction are between São Domingos and Bissora, between Bambadinca and Buba, and between Buba and Catió. Figure III-3 is a map of Guinea-Bissau showing the major roadways. The roadways under construction are highlighted with a heavy black line in Figure III-3.

Transportation services in Guinea-Bissau are also hampered by the large number of rivers and estuarine areas that penetrate the country. A relatively large tidal fluctuation restricts the use of ferries. For example, the ferry connecting the northern and southern portions of the country across the Geba river at Bissau can only operate if tidal conditions are appropriate. Often this limits the ferry service to one crossing per day.

The GOGB supplies land and water transportation services through its parastatal transportation company, Rodofluvial. However, it appears that rice merchants seldom use this service to move their products outside of Bissau. Their preference is to use their own vehicles or those hired from private truck owners.

FIGURE III-3 HIGHWAYS IN GUINEA-BISSAU



**ROADS UNDER CONSTRUCTION ARE INDICATED
WITH HEAVY LINE**

The private transportation industry had been promoted by a GOGB program to import and sell on liberal financial terms a substantial number of 20-ton trucks. In spite of this, the second most commonly heard complaint of village-level merchants was that there was a lack of transportation services.

Water-borne shipping services supplied by the state-owned company, Rodofluvial, appear to be an unattractive alternative to road transport for rice even for rice coming from the southern portion of the country. There is some concern that by charging rates that are less than actual cost, Rodofluvial may be restricting the entry of the private sector into the water-borne shipping business. The effect of Rodofluvial on the private trucking business does not appear to restrict entry; yet, may influence the private sector to charge rates that do not fully recover their costs. Such a situation portends future stresses in the private sector as the vehicles begin needing repairs or replacement and the owners find that they cannot afford the necessary expenditures.

Communication via telephone links the major cities. A state-owned television station began broadcasting in 1989.

(2) Money as a medium of exchange

A stable money supply is one of the major facilitating functions supplied by government. In Guinea-Bissau, the stability of the money has been a major constraint on its use. In fact, much of the trade at the farm level is still conducted via barter. One factor in explaining this practice is the farmers' perception that money is a poor medium of exchange because it does not retain its value. Government efforts to stabilize the currency include efforts to contain government expenditures in line with revenues, controlling the growth of the money supply below a target rate of inflation, and instituting a flexible exchange rate. There was some evidence of the beginning of increased reliance on money as a medium of exchange. Some larger merchants have begun accepting cash in repayment of some debts. Additionally, the increased level of consumer goods in local markets appears to be stimulating the need for money on the part of farmers. Instead of trading their produce directly for the goods they want, some are beginning to trade for cash which allows them more flexibility in converting their products into the goods they want.

The need for a stable currency can be expected to increase as farmers sell more of their production on the market. Their desire for rice will be limited by their personal needs as is characteristic of any consumer. Thus, their desire for additional rice can be expected to drop quite rapidly at some point. Beyond this point, the lack of a stable currency will discourage market transactions by forcing marketers to use the inherently complex barter system. The rice they receive in payment will quickly lose its value after their personal needs are satisfied because other merchants may not as readily accept the rice as payment for their services. A stable currency facilitates market transactions because all market agents readily accept it as payment.

(3) Banking services

Banking services are often supplied by a combination of public and private organizations. The banking system in Guinea-Bissau is quite limited. The one

existing bank in the country, the National Bank of Guinea-Bissau, does not have branch offices in all major towns. This restricts the access of the people to such fundamental banking services as credit and savings depositories. The lack of credit was almost always mentioned when small merchants were asked to list the major problems they face in operating their enterprises. The lack of savings bank services was noted when village residents were asked where they kept their accumulated cash earnings: the money not converted into tangible assets such as goats, is simply kept in the home. There are plans to create a privately owned bank; however, these plans had not been realized in late 1989.

(4) Legal system

Adequate legal services and a system of justice is nearly essential in facilitating the development of a market economy. The legal system in Guinea-Bissau suffers from serious shortages of qualified professionals and essential equipment¹. There is only one lawyer in the country who practices law full-time. The number of trained jurists holding judicial positions is less than one-third the number that would be required to satisfactorily operate the present legal system. The lack of basic office equipment within the Ministry of Justice has limited the people's access to the established law. For example, the index to legislation adopted since independence is on hand-lettered index cards and is several years out of date. No collections of legislation on any given subject has been published, either for the general public or the legal profession. There is some concern that the existing laws, largely adopted during the colonial period, are inappropriate for modern-day Guinea-Bissau. The concern is that the laws do not reflect the widely used traditional laws, which are quite appropriate for many matters, nor are they appropriate for a modern, market-directed economy.

(5) Information collection and dissemination

The efficiency of a market is directly related to the amount of widely known information regarding such market conditions as supply, demand and resulting prices. Due to the nature of the market for information, it often becomes the government's responsibility to assist in the collection and dissemination of this information. The GOGB is just beginning to expand its activities in this area. For example, monthly retail prices of a selected group of commodities sold in Bissau have been collected and aggregated into a price index series since 1986. The GOGB, with the assistance of the FAO, has begun an annual survey of agricultural production.

Outside of these efforts the amount of widely known information is limited. No data on the amounts of rice sold in the Bissau market exist from which the relationship between price and volume sold can be developed. There is no data on prices or volumes of rice sold in the major markets outside of Bissau. Data on the amounts and timings of imports and exports of rice and other commodities is very limited and not widely published. Thus, there is a substantial amount of uncertainty surrounding the amount of rice actually consumed in the country.

¹Report of an Advisory Mission of the International Commission of Jurists on the Administration of Justice in Guinea-Bissau by D. O'Donnell and J.A. Da Silva.

This lack of information complicates the planning of all marketing operations because market agents do not have an adequate notion of the level of supplies flowing through the system. Given sufficient information, market agents can make plans to keep this flow going smoothly.

b. Market supplied facilities

Efficient marketing requires generalized facilities or services that might not be completely devoted to a particular commodity. Such services as transportation or credit, for example, are used by all members of the economic community and are, therefore, often supplied by service firms rather than being self-supplied by all firms for their individual use. These services facilitate business operations by allowing firms to concentrate on the production of their primary products. This specialization increases the overall productivity of the economy. The number of specialized services offered is directly related to the size of the economy because the size of the market for specialized services will determine how many firms can operate economically. It follows that in a developing economy, many of these specialized services, such as accounting, insurance, or credit reporting services may not be offered. Thus, the following discussion will focus on the basic services of transportation and credit.

(1) Trucking services

The private sector trucking industry appears to be highly competitive and may be operating at a loss. A visit to the area where private trucks wait to be hired revealed how anxious the owners are for work. Nine trucks were in the waiting area; and as we walked up, we were immediately surrounded by truck drivers, owners, owners agents, and dock workers offering their services. Another example of the degree of competition was given to us by a firm that hired truck transportation services. The manager of the firm expressed his surprise at the low cost of truck services, saying that the rates charged could not cover the cost of the services.

A quick analysis of the major costs involved in operating a 20 ton truck will help illustrate this point. Table III-1 develops an estimated, daily operating cost for a 20 ton truck. The developed estimate does not include any charges for management. Also, no charges are made for such necessary capital assets as offices or garage. Note also that the estimate is based on the very optimistic assumption of full-time utilization of the truck: 288 days per year and 600 paying kilometers per day. Under these optimistic assumptions the estimated daily cost of operating the truck is 197 US\$ or 571,339 GP per day.

Our interviewee reported that trucks could be hired for week-long trips to Senegal at the rate of 1,300 US\$ per week. Even assuming the truck was idle, and not using fuel, for five days, our estimate of the actual cost would be 1,069 US\$ ($7 \times (132+3) + 2 \times 62$). This would leave a margin of 231 US\$ to pay the truck's contribution to the business's overhead and cover periods of inactivity. This margin would be eliminated if the truck worked only 75% of the expected working year of 288 days. Such slim margins are indicative of a highly competitive market that is probably operating with an oversupply of productive units. It also signals some future reduction in the number of operating units unless a substantial amount of new business can be generated. In plain terms,

this means that some private trucking businesses would be forced out of business in a normally operating, market-directed economy.

TABLE III-1

ESTIMATED OPERATING COSTS FOR A 20 TON TRUCK

Annual costs	US\$	GP @ 2900/US\$
(based on \$60,000 cost for a 20 ton truck)		
Depreciation over three years	20,000	58,000,000
Interest on investment (.5 x 60,000 x 20%)	6,000	17,400,000
Maintenance at 20% of investment	<u>12,000</u>	<u>34,800,000</u>
Estimated Total Annual Costs	38,000	110,200,000
Daily Expenses		
(based on 12 hour run at 50 km/hour or 600 km)		
Annual costs expressed on daily basis		
Annual costs divided by 288 days per year	132	382,639
Fuel (600 liters at 300GP/liter)	62	180,000
Driver (208,800GP per 24 day month)	<u>3</u>	<u>8,700</u>
Estimated Total Daily Expenses	197	571,339
Estimated Cost per Ton per Kilometer		
(Daily Expenses divided by 20 tons divided by 600 km)		
	.016	47.61

This analysis of the private trucking business was supported in an interview with a private trucking business operator. The business operated one, 20 ton truck; two, 5 ton trucks; four, 1 ton trucks; and one, 1.5 ton truck. The large truck was being purchased from the GOGB over time. Because of the inability of the firm to operate the large truck on a full-time basis, funds from other enterprises often had to be used to make the payments on the 20 ton truck. The operator did not have a definite idea of the cost of operating the firm's trucks, explaining that such information would not be very helpful in the present situation where the market set the price for truck services.

In response to a question regarding the rates he charges for the 20 ton truck, the businessman gave the following two examples. He would charge 1,200,000GP for a trip to Gambia which would require 12 hours one-way. At the parallel market rate of 2900 GP/US\$, this would translate into a charge of 414 US\$ for a trip lasting between two or three days or between 207 and 138 US\$ per day. When asked if he would hire the truck on an hourly basis, he indicated he would charge between 25,000 and 30,000 GP per hour. On a twelve hour day, 30,000 GP would translate into a daily revenue of 124 US\$. Both of these examples are indicative of a marginally profitable or unprofitable enterprise when compared to the estimated costs presented in Table III-1.

Discussions with rice merchants regarding their cost of transporting rice revealed a somewhat different picture of the profitability of trucking

enterprises. Table III-2 displays these data. The costs reported by AP are somewhat lower than those reported by the private sector merchants. This may represent the difference between the prices charged by the parastatal, Rodofluvial, and private sector trucking firms. AP may tend to utilize the services of Rodofluvial to a greater extent than the other merchants. The average ton/kilometer charge for routes located within the northern part of the country is 176 GP per ton per kilometer. This is substantially larger than the 47.61 GP per ton/kilometer calculated in Table III.1 and suggests a larger rate of profit than the previous analysis. This discrepancy must be further analyzed.

TABLE III-2
COLLECTED TRUCKING SERVICE REVENUE DATA
(Pesos)

Date Collected	Route	Total Revenue	Km	Tons	Revenue Per Ton Per Km	Revenue Per Kg	Regional Costs	
							North Only	North to South
Nov 17	Bissau-Cacheu	160,000	100	10	160	16		
Nov 18	Bafatá-Catió	500,000	196	10	255	50	160	255
Nov 19	Bissau-Gabu	300,000	201	10	149	30	149	
Nov 26	Bissau-Cacine	600,000	260	10	231	60		231
Nov 26	Bafatá-Cacine	400,000	175	10	229	40		229
Nov 28	Catió-Bafatá	200,000	196	10	102	20		102
Nov 29	Tite-Buba	100,000	66	10	152	10		
Nov 29	Fulacunda-Buba	218,000	36	10	606	22		
Nov 29	Bissau-Buba	500,000	223	10	224	50		224
Nov 30	Bissau-Farim	565,000	119	20	237	28	237	
Average Revenue Per Ton/kilometer by Regions							182	208
Data Obtained from Amrazen do Povo								
Dec 4	Bissau-Gabu	322,500	201	10	160	32	160	
Dec 4	Bissau-Bafatá	252,500	151	10	167	25	167	
Dec 4	Bissau-Catió	452,500	281	10	161	45		161
Dec 4	Bissau-Cacheu	182,500	100	10	183	18	183	
Average Revenue, Reported By AP, Per Ton/kilometer by Regions							170	161
Overall Average Revenue Per Ton/kilometer by Regions							176	212

The highest transportation distance reported by the rice merchants was 281 km. Unless the management of trucking enterprises in Guinea-Bissau is very efficient, it is unlikely that most trucks are used on more than two jobs per day. This suggests that the normal operating distance for the typical truck may be more on the magnitude of 300 km rather than the 600 km used in Table III-1. Also, note in Table III-2 that most of the reported cargo weights are 10 tons rather than 20. These changes are incorporated into a revised estimate of the ton/kilometer cost of operating a truck in Table III-3. The resulting estimate is 96.70 GP per ton/kilometer rather than the 47.61 GP figure calculated earlier. On a 300 km trip, the difference between the estimated cost of 96.70 GP and the 176 GP average price paid per ton/kilometer would result a substantial margin of 79.30 GP which would indicate the possibility of a reasonably profitable operation.

Factors that could detract from this optimistic prediction are the actual number of days and kilometers for which truck services could be billed. As mentioned

earlier, it is unrealistic to assume that the average truck is employed on a full-time basis of 288 days per year. A second factor is the number of days or kilometers the average truck is involved in the unproductive, and non-remunerative process of moving about without a paying cargo on board. This can occur when the truck operator cannot locate a cargo that will pay for the truck to be returned from a haulage contract. This problem is often referred to as the empty back-haul.

The trucking service charges calculated in Table III-2 use the one-way distance between the origin and destination points on the haulage route. This is because the rice merchants indicated that the charges were the one-way charges. If the truck were forced to return empty to its point of origin, the revenue per ton/kilometer generated by the contract would be one-half the figures shown in Table III-2. Thus, the average revenue for haulage contracts in the northern part of the country would be 88 GP per ton/kilometer and the profit picture of the average firm would again be dismal. These calculations are based on incomplete data and therefore can only be used to indicate possible scenarios. More complete analyses will require better data.

TABLE III-3

ESTIMATED OPERATING COSTS FOR A 10 TON TRUCK

Annual costs	US\$	GP @ 2900/US\$
(based on \$30,000 cost for a 10 ton truck)		
Depreciation over three years	10,000	29,000,000
Interest on investment (.5 x 30,000 x 20%)	3,000	8,700,000
Maintenance at 20% of investment	<u>6,000</u>	<u>17,400,000</u>
Estimated Total Annual Costs	19,000	55,100,000
Daily Expenses		
(based on 300 km per day)		
Annual costs expressed on daily basis		
Annual costs divided by 288 days per year	66	191,319
Fuel (300 liters at 300GP/liter)	31	90,000
Driver (208,800GP per 24 day month)	<u>3</u>	<u>8,700</u>
Estimated Total Daily Expenses	100	290,019
Estimated Cost per Ton per Kilometer		
(Daily Expenses divided by 10 tons divided by 300 km)	.033	96.67

(2) Water-borne shipping services

The private shipping industry in Guinea-Bissau is composed of many small firms operating locally made canoes or boats. Canoes are traditionally made boats based on a dugout log. "Boats" are small, european-styled vessels made from wooden planks or steel. A planked boat builder is said to be operating a training school in Catió. An increasing number of these canoes and boats have outboard motors. The freight hauling capacity of these small canoes and boats was not determined. Evidently, canoes and boats are used to assemble rice or

paddy in the southern portion of the country. Some people felt these types of boats were also used to transport rice to Guinea-Conakry.

The number of firms operating vessels with capacities over 10 tons was also not determined because no evidence pointed to a significant private business in local shipping. One major merchant indicated that he had recently purchased a 60 ton vessel for use in trade between the southern and northern portions of the country. The only other private firm we observed in the local shipping business was The Stenaks Trading and Shipping Company.

This company operates three, 25 ton vessels between ports in the southern portion of the country and Bissau. The primary commodity transported out of the southern region is rice. This enterprise appears to be unprofitable and can be expected to be discontinued in the near future. The primary causes for the unprofitable nature of this enterprise include: 1) the small size of the vessels being used, 2) the cost of assembling cargos in rural ports, 3) the cost, in terms of time expended and tariffs paid, of complying with government regulations in the various ports.

Shipping company officials explained that the vessel-related cost of shipping rice from Catió to Bissau is competitive with the cost of shipping via truck. However, when the non-vessel costs of cargo assembly and regulation compliance are added, the total cost is higher than for truck transport. Finally, Stenaks officials explained that due to a policy of charging rates that are set by the state-owned transportation company, Rodoflual, the full costs of operating the Stenaks vessels is not being recovered. This would imply that the vessels could not be replaced with funds generated from their use.

(3) Private credit services

Although there are plans for a private bank to serve more closely the private sector, the situation in late 1989 was that there was no private banking system in the country. Credit for commercial operations came largely from either international or local merchants. International merchants sell commodities to local merchants on credit, thereby financing the local merchant's operations. The GOGB has promoted this process by granting repayment guarantees to local merchants which can be used as collateral with the international merchants.

The big merchants involved in the rice market provide the major portion of the capital used in the rice/cashew marketing channel. This credit is extended to marketing agents working directly for the major merchants in the form of cash, vehicles, and trade items, such as rice and consumer goods. Since the credit resources of the major merchants is limited, it is expected that the amount of credit available to market agents at the lower levels of the market channel is limited.

This condition was reflected in the comments of most village-level marketing agents we interviewed. When asked what problems they faced in operating their businesses, the most commonly listed problem was that they did not have access to enough operating capital to service their market. The village-level marketing agents we spoke to often blamed the major merchants for the lack of credit, saying that the major merchants had a tendency to lend small amounts of credit

to several different individuals rather than concentrating the credit on a smaller number of individuals.

Such a policy of credit rationing may be appropriate under the circumstance in which the marketing network was being rapidly expanded and the credit-worthiness and marketing capability of many of the new marketing agents is unproven. Under the circumstances, this system of capitalizing the marketing system may have been the most efficient of any alternatives. Even a well-established banking system would have had difficulty issuing the large number of small loans that appear to have been made by the major merchants. The loans were typically made without the formal loan granting process that would have been required if a bank had issued the loans. Such a formal process would have severely limited access to the loans by most members of the population because the literacy rate in Guinea-Bissau is estimated to be only 5%. The informal process substituted the merchants' knowledge of the people for the more formal process that would have been required by any bank or publicly financed credit organization.

The competition among the major merchants appeared to have limited the capability of the money lenders to take unwarranted advantage of the borrowers. This notion can be supported by circumstantial evidence indicating that the flexibility of the borrowers has increased since the liberalization of the market. The first loans appear to have been made on very stringent terms which committed the borrower to repay the loan with commodities the value of which were largely set by the lender. For example we spoke with one commodity buyer who had purchased a small truck from a major merchant. The credit terms required the entire value of the truck to be repaid within one year with a specified quantity of palm oil nuts. The merchant appeared quite satisfied with the credit arrangements and actually repaid the full amount within three months. Loans made at later dates allowed the borrower to repay over a longer period of time and allowed the use of money for repayment. It is predictable that competition among the money lenders will force them to continue to relax the conditions on their loans to the point that the return they make on their loans is just equal to the returns they can expect on alternative investments.

In a well-developed economy, one would expect that more specialized lenders, such as banks, would take over the lending function from the merchants. However, under the present conditions in Guinea-Bissau it may be questionable whether such an organization could perform this function any more efficiently than the merchants.

Although the present system of credit may be the most practical, if not the most efficient, means of capitalizing the marketing system, it leaves unprovided one important banking service: savings bank services. At present, most of the population have no access to savings bank services. This limits the utility of money because people have no method, which protects the value of the money, of storing any money they may have. Secondly, the lack of savings bank services prevents the financial intermediation process which mobilizes surplus funds for useful purposes. This process occurs when the small surplus funds of many are accumulated into a fund large enough to be lent to people who can put the funds to productive use. This mobilization process allows communities to take a part in the financing of their own development.

C. Market Structure: How Market Participants are Organized

1. The major merchants and their trading organizations

The six major merchants in the Guinea-Bissau rice sector are generally recognized to be:

Armazens do Povo (AP)	Geta
Fara Heneni	Djabi
Jacquité	Tonkara.

Armazens do Povo (AP) is the state-owned firm that once held monopoly power in the export and import of all agricultural commodities in Guinea-Bissau. Armazens do Povo also held monopoly power in the sale of many consumer goods, including rice. Other merchants were allowed to sell the same consumer goods that AP sold; but, only at a premium over the prices offered in the AP shops. This relegated the private sector to servicing markets not served directly by AP. These were markets located in isolated villages since AP had established shops in all major towns and most major villages.

The purpose of the AP shops (called delegations) was to provide markets for locally produced products and imported consumer goods. Locally produced goods, such as rice, cashew nuts, palm oil nuts, peanuts, palm oil, honey, and bees wax were purchased and either exported or resold on the domestic market. Rice, for example, would be purchased in the surplus areas and resold in deficit areas. Imported rice was used to make up the difference between the national production and domestic consumption. Much of the trade between the AP shops and producers was conducted on barter terms. For example, one kilogram of rice was traded for two kilograms of raw, unshelled cashew nuts.

The recent change in policy stripped AP of its monopoly powers and encouraged the private sector to enter into direct competition with AP. AP remains a functioning organization; and, although its powers are reduced, it still retains considerable power derived from its extensive marketing organization and its experience.

The five private sector firms that vigorously accepted the challenge to compete with AP have modelled their organizations after the AP. These organizations import and export agricultural commodities and have marketing networks that are national in scope. The major focus of these businesses is on the export of cashew nuts. This implies that the business of supplying rice to urban consumers has been largely left to AP and smaller urban retailers. (When urban rice prices are favorable, the major merchants can be expected to sell rice on the urban market; however, their major concern is having rice available for the annual cashew season. Thus, urban rice sales are probably a minor focus of their businesses.) As does AP, these merchants use imported and domestically produced rice to obtain the cashew nuts through barter. The organizations operate through a series of village-level agents who trade rice and consumer goods for locally produced products.

A major difference between AP and the newer merchants is that the newer merchants rely less on established shops and more on mobile agents than does AP. The two big merchants we were able to interview, Fara Heneni and Geta's Mandinga, told

us they each own less than six shops located throughout the country. Much of the village-level trade for the big merchants is conducted by individuals operating out of their homes or small shops using vehicles and credit supplied by the big merchants. The major merchants also trade with independent, merchants of intermediate or small size.

2. Secondary, independent merchants

A substantial number of merchants exist who own one or more shops but do not have extensive marketing organizations or networks as do the six major merchants. These merchants are primarily in the retail business of selling consumer goods. Most of these merchants buy their rice stock from the major merchants. Of the major merchants, AP probably supplies the majority of this stock, especially in Bissau, Bafatá, and Gabu, since the other merchants are more interested in trading their stock for cashew nuts. The importation of consumer goods is less concentrated than that of rice with intermediate sized merchants importing such consumer items as prepared foods, clothing, and hardware items. In Bissau and the major towns, these merchants conduct their trade in cash. Intermediate merchants in rural areas tend to duplicate the activities of the larger merchants but on a smaller scale, trading consumer items for local products.

3. Itinerant merchants

An unknown number of independent, itinerant merchants, known as Djilas, continue to operate in the rural areas. These merchants are traditionally from Senegal and operate from trucks.

4. Women's inter-regional rice/tobacco trade

Another traditional form of trade is conducted by rural women of the Balanta tribe. This same form of trade may be conducted by others; however, we only noted it in a Balanta village in the southern region of the country. The women of this village take rice and handicrafts to the northern region and trade for tobacco. After returning to their homes, the women process the tobacco for sale to their male relatives and neighbors. The men pay for the tobacco with rice.

5. Farmer organizations

What appears to be a relatively new force in the rice market in Guinea-Bissau are village-level producers' organizations. These were observed in the southern region of the country. These organizations were initiated by DEPA to serve as the focus for village-level development efforts. The most obviously successful of these efforts is the establishment of small rice mills. DEPA organizes a rice mill committee, trains its members in basic organizational management and basic record keeping and then sells the organization a small rice milling machine. Follow-up services provided by DEPA include training in the operation of the machine and supervision of the organizational management and record keeping procedures.

The benefits flowing from these organizations are numerous. The process of milling the rice has provided additional sources of income for both the mill operators and the rice producers who can sell the polished rice at a profit.

Village women who can afford to use the services of the rice mill rather than decorticate rice by hand can now use the time freed from the hand milling process for other activities. The accumulated profits and experience from the operation of the mill are providing capital the village level organizations are using in other marketing enterprises.

6. Intra-familial trade

Most city dwelling people still have strong familial ties to relatives living in the rural areas. Often these ties are the basis of reciprocal supportive relations. When a family member experiences difficulty, the other members of the family come to their aid. Some of the people we talked with felt that such assistance could account for a substantial portion of the total amount of rice moving from rural to urban areas in Guinea-Bissau. The only other evidence we obtained on this phenomena came from an exploratory survey of residents of Bissau. The purpose of the survey was to explore the possibilities of establishing average rice consumption patterns for these people. One question asked if the respondent received gifts of rice from family members or other friends living in the rural areas. Sixty-seven percent of the respondents said yes. Of this 67%, 60% said they received rice on a regular basis. Thus, it appears possible that nearly 40% of the people in Bissau receive food aid from their friends or relatives in the rural areas. Additional study is required to estimate the magnitude of this intra-familial trade in rice.

D. Market Conduct: How Market Participants Conduct Their Business

Conduct has a major impact on the performance of a marketing system because it can facilitate the production of either clear or distorted resource utilization signals. For example, the use of unequal market power between buyers and sellers to set the price of a market transaction in favor of one of the participants can distort the prices that signal the socially acceptable use of resources. While conduct is influenced by the structure of a market, it is not totally determined by structure. Thus, the existence of a small number of powerful market players, as is found in the Guinea-Bissau rice market, does not automatically imply that those players will collude to fix prices in their favor. Such structure simply signals the possibility of non-competitive conduct and suggests that the conduct of the marketing agents be reviewed.

1. Use of market power and credit

Circumstantial evidence from our interviews with market agents at all levels of the rice market indicate that the most significant change in conduct has been a substantial reduction in the use of market power to set prices in favor of one participant to a market transaction. The major evidence reveals the expected change in prices following the dissolution of monopsonistic power: the price of the products of those market agents with the least amount of power has increased. Specifically, the price of cashew nuts and the price of rice, both products produced by relatively powerless farmers, have increased.

Similar conclusions are indicated by changes in the conduct of village level merchants. Prior to the liberalization of the market, these merchants had the power to dictate the terms of market transactions including those involving

credit. Farmers desiring to purchase rice or consumers goods on credit would have to agree to repay the loans with merchandise specified by the merchant. Now, merchants are lending goods, such as rice, to farmers with the understanding that the same amount of rice would be returned to the merchant at harvest time. The merchants explained that they were doing this in order to develop goodwill with the farmers in hopes that the farmers would continue to conduct their business, including the sale of their products, with the merchant.

As noted above, the weight of the evidence collected during our interviews suggests that the major merchants are not colluding to set prices in their favor. Additionally, it appears, as discussed above, that the major merchants are losing their ability to control their village-level agents due to the increased competition among the major merchants to establish a marketing agent in all important villages.

The change in product prices provides further evidence of the absence of non-competitive influences operating in the market. In a highly competitive, open, market-directed economy one would expect that prices inside the country would reflect world prices as adjusted by any relevant taxes. A merchant provided some prices which can be used to determine how closely this situation occurs in Guinea-Bissau. The merchant imports rice and exports cashew nuts. The price of a recent shipment of rice was 328 US\$ per ton delivered to the dock in Bissau (cif). The merchant recently sold a shipment of cashew for 755 US\$ per ton which included the cost of loading the product on board the ship (fob). Assuming that these prices are reflective of the relevant international prices, the value of cashew nuts is 2.3 times the value of rice.

Inside Guinea-Bissau this ratio was observed to be moving from the monopsonistically set ratio of .5 toward a ratio of 1. The ratio .5 reflects the previous practice of trading one kilogram of rice for 2 kilograms of cashew nuts. The price ratio is calculated by dividing 1 by 2. The current barter terms appeared to range between 1.5 and 1 kilos of cashew for one kilo of rice. These barter ratios would indicate cashew-to-rice price ratios of .67 and 1. The .67 ratio is calculated by dividing 1 by 1.5 since 1.5 kilograms of cashew is traded for one kilogram of rice.

The difference between the external and internal ratios may be explained by the 40% export tax placed on cashew nuts and by transfer costs within the country. If the 755 US\$ price is reduced by 40%, it becomes 453 US\$ per ton. In this case, the actual, external ratio between the prices of cashew nuts and rice for merchants in Guinea-Bissau is 1.38 ($453/328 = 1.38$). This price ratio is for the two commodities on a ship at the dock in Bissau.

To reflect transfer costs to or from the village level, the price of each commodity would have to be adjusted in the opposite direction. The rice price would have to be increased to account for the cost of transferring the rice through customs to the village level. The price of the cashew would have to be reduced to reflect similar costs of moving the cashew from the village through customs onto the ship. The rice price would be increased by 20% for customs and dock fees and 100 GP/kg or 34 \$/ton ($100,000 \text{ GP}/2900 \text{ GP}/\$ = \34.48), for transport and handling fees. The cashew price would be reduced by 5% for port fees and 100 GP/kg or 34 \$/ton ($100,000 \text{ GP}/2900 \text{ GP}/\$ = \34.48), for transport

and handling fees. The resulting price ratio at the village-level would be .92 ($\$396/\$428 = .92$). This ratio compares favorably with the existing, village-level ratios which were observed to be between .67 and 1. If the assumptions of this analysis are correct, it indicates the probability that internal prices closely parallel international prices. This condition indicates the existence of a competitive internal market with the absence of unequal market power.

It must be stressed that this analysis is quite limited by the available information. For example, it is uncertain whether the 755 US\$ includes or excludes the 40% export tax. Secondly, the port charges for the export of cashew have been estimated. Finally, the transport and handling charges have been estimated. Thus, rather than be accepted as the definitive judgement of this matter, this analysis should be used as an indication of the current tendency in the market and suggests a more complete analysis is required.

2. Price discovery

Price discovery is the important process of setting the price at which a resource should be traded in the market. The competitive ideal is for prices to be set through an auction in which all buyers have an equal opportunity to bid or offer a price for the resource. A reasonable approximation of the auction process is one in which buyers and sellers have the option of negotiating with several potential sellers or buyers to discover the transaction that provides the greatest level of profit. This is the best description of the current price discovery process in Guinea-Bissau under the liberalized market policies. This situation is reflected in the increased bargaining power of farmers. They now have several options for selling their products and for purchasing the consumer goods they want because the major and intermediary merchants are competing quite vigorously for their business.

3. Marketing functions

This section will briefly discuss how the six major marketing functions are conducted in the Guinea-Bissau rice market. As is common in a developing market, there are a great number of possible ways the marketing functions can be performed. This can be restated: there are a great number of possible paths the product can follow as it moves through the marketing channel. This is in contrast to the expected situation in a well-developed market wherein the major portion of the commodity follows a limited number of paths from the producer to the final consumer. In the more developed situation, each marketing function tends to be performed by a specialized market agent. For example, farmers usually do not get involved in processing, wholesaling or retailing because it is not profitable for them. However, in the situation where the market channel has not become developed enough to allow market agents to become specialized, the farmer may perform all marketing functions and market directly to the final consumer. Equally possible, other market agents in the channel may perform several of the marketing functions. This is the situation in the rice marketing channel in Guinea-Bissau. This fact should be kept in mind as the reader reads the separate discussions of each marketing function below. The fact that these discussions are separated should not be understood to imply that the functions are performed by separate groups of marketing agents.

Figure III-4 is a diagram of the rice marketing channel as it is presently understood. The obvious feature of the channel is that it is quite complex with multiple connections among the marketing agents.

a. Assembly

Assembly of locally produced rice is probably the most difficult task in the rice marketing network. The major rice producing region of the country is the southern region, composed of the two administrative regions of Quinara and Tombali. This region is best characterized by its lack of roadways to the major producing areas. Farms are isolated, often located on small islands. Thus, the task of collecting rice from these areas into economically transportable size lots is physically difficult. The task is made more difficult by the institutional fact that the farmers are not cash-crop farmers who tend to sell their entire crop immediately after harvest. Instead, the farmers are largely subsistence farmers who sell only a portion of their crop. This implies that the farmers treat their marketable surplus as a store of value which they sell to repay debts or to acquire commodities they do not produce at home. This practice results in a flow of rice into the market over a period of time in quantities which restrict the use of large scale grain handling methods. It requires that assembly agents be prepared to remain in the buying stations over a period of time which may reduce the efficiency of their operations.

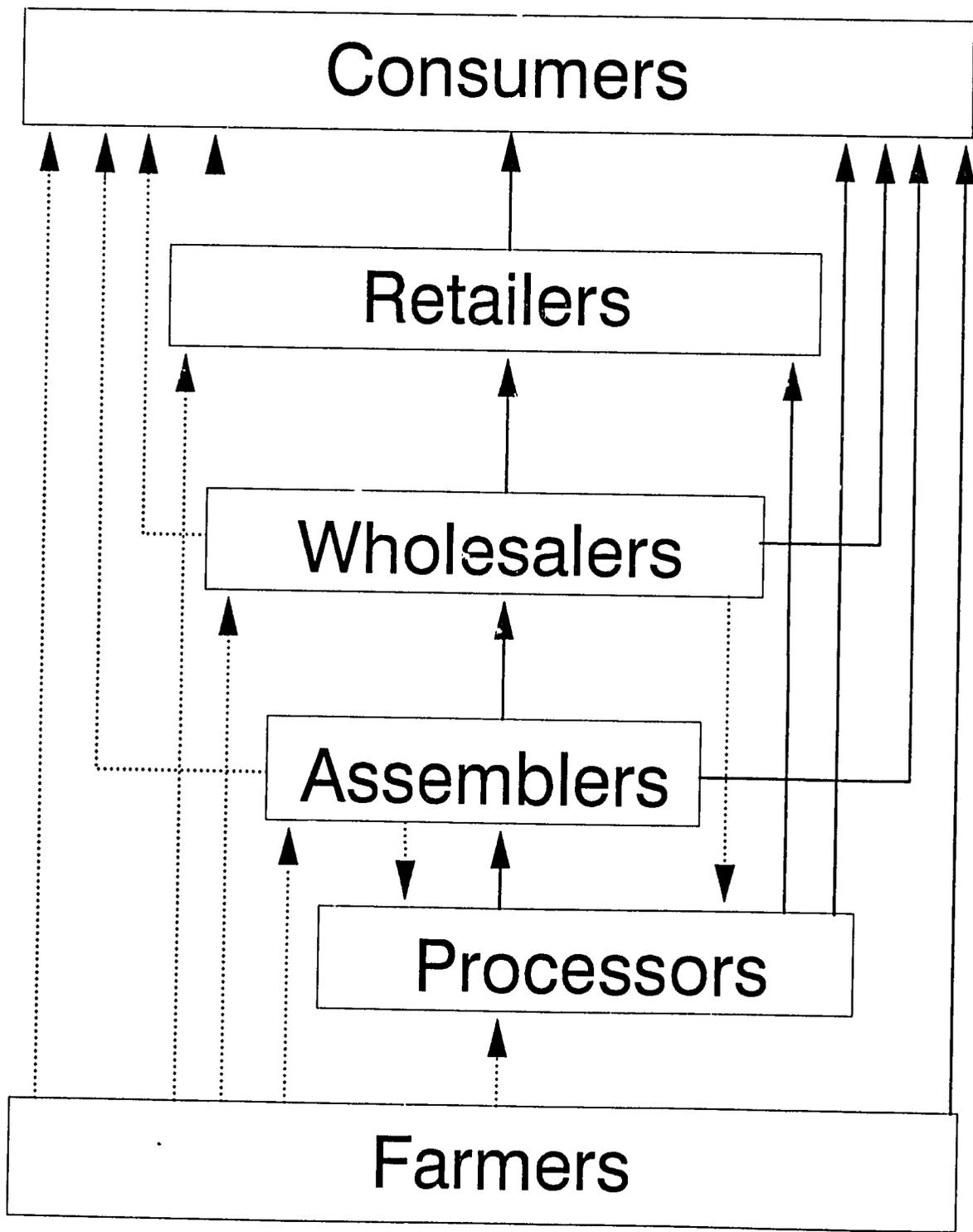
The gross margin (difference between selling price and buying price) observed for assemblers ranged between 50 and 70 GP per kilogram of paddy handled. This gross margin represented approximately 20% of the assemblers' selling price. The 50 GP/kg margin reflects the prices paid by AP. One of AP's more experienced agents mentioned that AP expects assemblers to earn approximately 50 GP/kg on the paddy they assemble. Transportation costs will have to be added to this assembly cost to determine the wholesaler's cost of moving the paddy to the next stage in the distribution channel.

b. Processing

Locally produced rice is usually decorticated by hand pounding; however, another alternative is becoming more widely available. Thirty-six rice milling and polishing machines have been set-up in the southern portion of the country under the sponsorship of DEPA. The village-level organizations operating these mills, which have a capacity of 250kg of paddy per hour, are offering the rice milling services to the general population. The charge for the milling is 1kg of milled rice per 10kg of paddy milled. Alternatively, customers can pay 25 to 50GP per kilogram of paddy milled. For reference purposes, the cost of milling rice in the U.S. is estimated to be \$2/100 lbs. or \$.02/lb. This translates into a cost of \$.044/kg. Using the parallel exchange rate of 2900GP/US\$, the US cost of milling is 127.60GP/kg.

Even at 50GP per kilogram of paddy, the practice of milling the rice by machine appears to have potential for increasing producers incomes. The wholesale buying price for paddy during the last season ranged from 250 to 300 GP/kg. While the wholesale buying price for milled rice ranged from 400GP/kg up to 650 GP/kg. Due to the 65% yield of rice from paddy, the milling cost per kilo of rice is 38.46 to 76.92 GP per kilogram ($250/.65=38.46$ and $50/.65=76.92$). Assuming a cost

FIGURE III-4
 PADDY AND RICE MARKETING CHANNELS IN GUINEA-BISSAU



Paddy Rice —

of paddy of 250 to 300 GP/kg, the cost of the rice in a kilogram of polished rice is 384.62 to 461.54 GP/kg ($250/.65=384.62$ and $300/.65=461.54$).

Adding the cost of the rice and the cost of the processing yields a finished product cost ranging between 423.08 and 538.46. Thus, farmers who chose to mill their rice in the local mills prior to sale to local retailers or to retail customers have the opportunity of increasing the revenue they receive from the sale of their rice. The level of profit associated with this marketing enterprise will depend on their costs beyond the cost of processing and their ability to market the product at a profitable price. The retail price of imported rice reached 1000 to 1200 GP/kg in some urban markets during the fall of 1989. Such prices should attract increased efforts to market locally grown and process rice in the urban areas.

The low price of 50GP/kg of paddy charged by the village-level rice mills may signal problems for the village-level organizations when the rice milling machines begin to wear out and require replacement. The 50GP/kg price was set in 1986 and has not been adjusted for changes in the value of the money. Prices for replacement parts have increased over 500% since 1987. Unless the prices charged for milling are changed to reflect changes in the value of the Peso, the village-level organizations may not have enough money to purchase the replacements. One method of avoiding the problems of money is to accept payment in either rice or paddy. This would effectively allow the price paid for services to change with the changes in the real value of rice.

A 1989 study of the small rice mills predicted a comfortable rate of profit if the milling organizations charged 50GP per kg of paddy milled and were able to mill only 65 tons per year². The 65 tons represent approximately 30% of the mills estimated annual capacity of 225 tons. The average mill processed 77 tons per year. However, the profit prediction was based on the assumption that the replacement cost of the mills and spare parts would not increase over a five-year payback period. The practice of accepting rice or paddy as payment would significantly offset the effect of the changing value of the replacements if the price of rice changed in relation to the changes in the price of the replacements.

The small rice mills appear to be processing a significant amount of the rice processed by machinery in the country. The 1989 study estimated that 29 of the 36 rice mills processed 2,235 tons of paddy per year. This is almost equal to the amount of rice paddy processed by the country's major rice mill. However, it represents approximately 2 percent of the estimated annual production of 100 thousand tons. The small mill with the highest production processed 206 tons of paddy in one year. If all 36 small mills could achieve this level of production, the total production would be 7,416 tons per year: approximately 7% of the annual rice crop. Since the average village-level mill processed only 77 tons, it is evident that the southern portion of the country has an excess capacity to mill rice under present market conditions. In fact, the present mills have the capacity to increase the level of milling services over 2.5 times.

²Estudo Das Descascadoras de Arroz Instaladas Pelo DEPA-Coboxanque na Regiao de Tombali, by Patrick Levaux, April 1989.

Utilizing this excess capacity will require changes in the use of the milling services by local villagers or an increase in marketing efforts to bring the milled rice into the urban areas.

The GOGB owns a rice mill in Bissau with the capacity to mill 150 tons of paddy per eight hours. The cost per ton to process rice in this mill was not available during our visit. The mill was installed in 1956 and is presently operating at a fraction of its installed capacity. The mill processed 2,000 to 3,000 tons of paddy from the southern region of the country during the last season which ran from March through August of 1989. The fact that the mill only operated a fraction of the year indicates the existence of excess milling capacity in the main urban area of the country under present market conditions. Thus, under present market conditions, it appears that both the southern portion of the country and the major city of Bissau have excess rice milling capacity.

It is clear that this mill cannot supply enough rice to replace the typical need for 40,000 tons of imported rice even if the necessary paddy were available from local production. At a milling yield of 65%, 40,000 tons of rice translates into approximately 62,000 tons of paddy. At its rated capacity of 150 per 8-hour day, processing this amount of paddy would require 413 days. If the mill worked a 16-hour day, the 62,000 tons could be processed in 207 days.

We received reports of several other rice mills; but, were unable to verify their existence. One of these mills has a capacity of 20 tons per day and is reported to be in Bissau. Three machines of 3 tons per day are reported to be in Cufar. Also, it was reported that AP was planning to import ten machines of 3 ton per day capacity.

c. Wholesaling

Wholesaling is the marketing function that moves the product from the processing stage to the retailing stage. Wholesaling in Guinea-Bissau is not performed by a clearly defined set of market agents who can be called specialized wholesalers. It appears that all market agents in the distribution channel from the farmers up may perform some wholesaling functions. A major portion of the wholesaling function is performed by the six major merchants, distributing the product from their village-level agents, proprietary shops, and the shops of independent merchants in the rice surplus areas to similar marketing agents in the deficit areas. Wholesaling may also be done by a larger group of smaller sized merchants including the Djilas (independent, itinerant merchants). The Djilas buy rice and paddy from assemblers and sell to larger merchants.

Because the wholesaling function is usually combined with some other function, it is difficult to identify the revenue related to this function. Thus, we do not have figures for the wholesaler's margin. This margin would be the difference between the price the wholesaling agent receives for its product less the price the wholesaling agent paid for the product.

d. Retailing

Retailing is the final stage of the marketing channel. At this stage, the product is sold to the final consumer. Like the wholesaling function, the

retailing function is performed by most agents in the marketing channel from farmer to retailer. However, because there are numerous marketing agents who specialize in retail sales, some estimates of the retail margin can be made. On a country-wide basis, the observed retail margins for rice ranged from 5 to 30%. The higher margins were generally observed in small towns of deficit areas while the lower margins were observed in the capital city. These margins were much higher for some merchants during the brief period of intense scarcity in the summer of 1989.

Most rice retailing is done from shops carrying a general line of consumer goods. However, a substantial amount of rice is sold by individuals who sell only rice. These individuals are usually women and can be usually found in the bazaar-type markets or outside the shops of general merchants. The rice is generally sold in an unpackaged form in one kilogram units. However, some general merchants sell only by the 50kg bag. This practice creates the market opportunity for the specialized street or bazaar merchant since many customers cannot afford to purchase 50kg of rice at a time.

The merchant either weighs the rice or uses a volumetric measure (caneca) which contains approximately one kilogram of rice. Once the rice is weighed or measured, it is poured into the customer's container.

Rice sales at the village-level are usually transacted on a barter basis. The barter terms of trade varied by location. In Contuboel, a cow was traded for 300kg of paddy. On the island of Como, the value of rice appeared to be generally lower. On Como, a cow is worth 20 balaaios of paddy or 600 kg, since a balaiao of paddy weighs approximately 30kg. In some cases, sales of paddy among neighbors are transacted at night to hide the fact that one farmer has rice to sell and that another is in need of rice.

e. Storage

The storage function takes place at most stages in the marketing channel. A considerable amount of storage can be assumed to occur in the field. Farmers harvest the rice over a period of time. This means that some rice is not harvested shortly after it is mature which implies that the paddy is "stored" on the stalk for some time. Farmers store paddy and rice in their homes. The method of storage used was not observed, since it was considered impolite to ask to see a farmer's stored rice. The sociologist, Mr. C. Rui Rebiero, who was the market research team's guide in Guinea-Bissau, explained the reason for this. Apparently, no farmer wants his neighbors to know how much rice he has in storage for fear that he might be asked to share that rice with friends and relatives.

According to the Crop Protection Service of the Ministry of Rural Development and Agriculture, examples of traditional crop storage include elevated, open or mud-daubed baskets with thatched roofs, in large pottery containers with fairly tight-fitting lids, and in open baskets or sacks. Significant, but undocumented, losses occur due to vertebrate and invertebrate pests, including insects and molds. The Crop Protection Service is attempting to increase the villagers' awareness of storage techniques through a small number of demonstration, storage units.

Assemblers, wholesalers, processors and retailers store paddy and rice in sacks in their warehouses. The techniques used to insure the quality of the grain, beyond keeping it out of the rain, are very limited. The Crop Protection Service has no on-going programs to assist warehouse operators insure the quality of their stored grain. Thus, the amount of grain and grain quality lost during storage in commercial warehouses is quite likely not available.

f. Transportation

The women who harvest the rice carry it to their homes in small baskets on their heads. This method of transport is also used to move the paddy or rice from the farmer's home to the assembly point. If the paddy is located on an island, it is transported from the assembly agent's place of business by women carrying 30 kg basket loads on their heads. The women carry the rice or paddy to the dock where they pour the rice into a canoe. On Como Island, the women are paid 50GP/basket load. The canoe is usually lined with straw mats to contain the rice. The canoe then moves to a mainland dock where the rice is bagged and loaded onto trucks. The cost of a canoe (cargo size unknown) from Como Island to the dock at Catió was 20,000GP.

From the assembly point, the rice or paddy is bagged and transported in trucks. The cost of loading and unloading a ten ton truck was generally said to be between 60,000 to 120,000 GP. This price paid for 6 to 8 workers who received 10,000 to 15,000 GP each. The cost of loading and unloading in small villages may be considerably less. One respondent told us that these workers were paid 5,000GP each. Trucking costs depended on the origin and destination areas. If the haulage job was in the northern portion of the country, where roads are generally in fairly good condition, the charge per ton per kilometer or ton/kilometer averaged 176 GP. This average is over the limited amount of data we collected from market agents we interviewed. See Table III-2 where all the data we collected relative to trucking charges is displayed. The charge for truck services that included an origin or destination in the southern portion of the country averaged 212 GP/ton-km. The higher charge for travel in the south probably reflects the poor quality of the roads in that area.

As noted earlier, the prices of trucking services may indicate an oversupply of trucks on the market, under present market conditions. An attempt was made to determine the number of trucks in the country; however, the data was not obtained. One source reported that 100 20-ton trucks had been imported by the government and sold to local merchants. Another source put this figure at 40 rather than 100. It was also reported that several 3.5 ton trucks had been imported by the major merchants for their own use or for resale to their agents.

4. Use of rice and paddy as trade items

Rice and paddy are used as money in Guinea-Bissau. Quantities of rice are regularly used to pay the wages of many workers. A plantation owner pays his workers a daily ration of .6kg of rice each day they work. Commercial rice farmers in the Bafatá region paid women 20% of the paddy they harvested as a payment for harvesting the crop. Foreign nationals in Bissau reported that they paid part of the wages of people who worked for them with rice because the people expected it. Guinea-Bissauans who work for "international projects" were

reported to receive 25 to 30kg of rice per month as a supplement to their salaries. Although the practice has been officially abolished, many government workers were also reported to be receiving portions of their salaries in rice.

Rice is traded for locally produced commodities such as cashew nuts, palm oil nuts, peanuts, palm oil, bees wax and honey.

E. Market Performance: Supply Appropriate Quantities, Forms and Qualities of Rice at Appropriate Times, Places and Appropriate Prices

1. Appropriate forms: paddy versus rice

Although rice stores best in paddy form, it can be consumed only after it is decorticated. Thus the most appropriate form for rice depends on its immediate use. Because of the high weight of the rice husk, rice should be stored and decorticated near its production area to save transportation expenses. This pattern of rice storage and processing is beginning to be established in Guinea-Bissau. Merchants told us of the increasing tendency of farmers to decorticate their rice before selling it. The explanation for this trend includes two factors. First, there is the increased availability of rice milling machines in the southern portion of the country. Secondly, there is the difference between the price farmers received for paddy and rice. On Como Island this difference ranged between 165 and 273 GP/kg. This is a quite significant increase in revenue equal to 43% and 99% of the price they were receiving for the decorticated rice contained in their paddy.

This is calculated as follows. The price of paddy ranged from 180 to 250 GP/kg. If the farmers converted the paddy to rice at the milling yield of .65, these prices would imply that the farmers were receiving the following prices for the decorticated rice in the paddy they sold: 277GP/kg and 385GP/kg ($180/.65=277$ and $250/.65=385$). Thus, the difference in the revenue they received for the rice was the difference between these adjusted prices and the 550GP/kg paid for decorticated rice. These differences are equal to 43% and 98% of the adjusted paddy prices ($550-277/277=.99$ and $550-385/385=.43$).

Less dramatic differences in prices were reported in Catió and in Mato Farroba. In Catió, at the beginning of the season, the difference between paddy and rice prices allowed a 30% increase in the farmers' revenue on a decorticated basis. Paddy prices were 200GP/kg while decorticated rice was being purchased for 400GP/kg. However, at the season progressed, this relationship changed and it no longer was profitable to mill the rice before it was sold. Paddy prices were up to 400GP/kg while the price for milled rice only increased to 600GP. At these prices, the decorticated rice contained in the paddy was worth more than the milled product ($400/.65=615$).

It is possible that the 600GP/kg price and the 400GP/kg price should not be directly related in this way; however, two merchants reported this evolution in prices. One would expect that the relationship between the paddy and decorticated product would remain the same. At the least, the price of the decorticated product should cover the identifiable costs of decortivating the paddy: at least $50/.65=77$ GP/kg. This would imply a price for the decorticated rice close to 700GP/kg ($400GP/.65 + 77GP$ for milling = 692.38). For the relation

between paddy and rice at Catió to remain the same, the price would have to increase to 800GP/kg when the price of paddy increased to 400GP/kg. Since the prices apparently did not behave as expected, this situation signals the need for further investigation.

2. Appropriate quantities

a. Uneven flow of rice on urban and rural markets caused by uneven importations

Quantities are not appropriate when scarcity in the market causes a significant increase in the retail price of a commodity. Such an increase occurred during the summer of 1989. Some increase in price during this "lean season" is expected. For example, Annex VI displays the average monthly retail price of rice in Bissau for the three years 1987 - 1989. Each year contains one or more months during which the average price was more than 150% higher than the simple average of the monthly average prices. Thus, for the past three years, significant price increases in a given month appear to be a feature of the GB rice market. The price increase during the summer of 1989, which amounted to over 150%, may be explained partially by the disruption in the normal flow of imported rice into the country during the summer of 1989. It is possible that this was caused by the change in government policy which converted AP from its monopolistic position as the sole buyer of rice for the country to a position of being only one of several firms with the capability to import rice. The uncertainty of the new situation may have caused the disruption in the normal rice buying practices.

AP may have hesitated to purchase the usual quantities of rice because it expected some of the new importing firms to begin importing rice. The new firms may not have been adequately prepared to import the proper amounts at the proper time. Alternatively, the importing firms may not have been able to meet the financial requirements of their importation contracts simply because the foreign exchange was not available when needed. While an analysis of the import records may assist in resolving the cause and effects aspects of this issue, it is assumed that this problem will be corrected as more private importers enter the rice importation business and gain the necessary experience to adjust the flow of rice into the country to match supply conditions.

3. Appropriate qualities

a. Imported versus national rice preferences

There is substantial evidence in the form of the observations of merchants that locally grown rice is preferred over low quality, imported rice. This evidence was substantiated by observed price differentials on two occasions. At Bambadinca, 100% broken, Pakistani rice was selling, at retail, for 1200GP/kg. Just outside the merchant's shop, local women were offering local rice for sale at 1500GP/kg. This is a margin of 25% over the price of the imported rice. The quality of the local rice was demonstrated by having the customers smell the rice. The local rice lacked the moldy smell of the imported rice. At Tite, a merchant told us that he had sold national rice at a price that was 13% higher than a comparable quality of imported rice. One factor which may have prevented

us from observing more price-based evidence of the preference for national rice was the fact that the local rice harvest had just begun. As a result, we seldom observed national rice in the market during our study in November 1989.

The willingness of consumers to pay premiums for imported rice of different qualities was observed in price differentials. A merchant in Cacheu had two qualities of imported rice: one selling for 900GP/kg and another selling for 1,500GP/kg. A merchant in Bissau displayed four different qualities of imported rice, each with a different price. The lowest quality sold for 740GP/kg while the highest quality sold for 1000GP/kg.

b. Preferences relating to percentages of broken kernels

Some preferences relating to the percentages of broken kernels in the rice were observable. Higher prices were being paid for 35% broken than for 100% broken.

4. Appropriate times

a. Agricultural calendar and the need for rice in rural areas

Rice is planted in the months of August and September and harvested during October, November, and December. Supplies of rice in the rural areas, then, are most abundant immediately after harvest. The lean season, the season when supplies are at their minimum, occurs during the months just prior to the harvest. In the village areas away from all-weather roads, the lean season period is complicated by the fact that trucks carrying supplemental supplies of rice from other areas may not be able to reach the deficit areas during the lean season because the annual rains have made the roads impassable. Citizens living in these areas normally take additional precautions to store enough grain to carry them through the lean season. Those families who do not have enough rice for the whole season are forced to rely on other grains and on family relations or neighbors to help them through the season.

b. Agricultural calendar and the need for rice in urban areas

The yearly agricultural cycle influences the availability of rice on the urban market in, at least, three ways. First, the yearly rice harvest tends to increase the supply of rice on the urban market through direct sales or through transfers to urban dwelling family members. Secondly, the yearly "campaign" to purchase cashew nuts is largely based on bartered rice. Thus, in those months prior to the cashew harvest, merchants may be more concerned with retaining available supplies of rice, especially imported rice, for use in the cashew campaign. This could imply a restricted supply of rice on the retail market during these times. The scarcity on urban markets could be exacerbated during the cashew campaign if rice supplies for bartering purposes were less than requirements.

Finally, the supply of imported rice in the urban areas at the end of the cashew campaign can be expected to be low since a major portion of rice owned by merchants may have been used in the cashew campaign. This condition can be expected to persist for several months because the nation's ability to purchase new supplies of rice just after the cashew campaign is low due to the lack of

foreign exchange. The next major injection of foreign exchange will occur when the cashew merchants receive payment for their crop.

5. Appropriate prices

a. Relation of local prices to international prices

Commodity prices are appropriate when 1) they allow consumers to purchase the goods they wish to purchase at the lowest price possible; and, 2) they direct the use of resources within the country toward the production of goods which can either be sold in the international market or can compete with imported goods. To a large extent, a nation is like a family in that it should not produce at home those things it can buy cheaper in the market. This notion translates into a policy of unrestricted international trade which allows a nation to purchase from the international market those things it can buy cheaper than it can produce at home. For a nation or a family to live in relative independence of its neighbors, it must produce enough salable goods and services to support itself. This arrangement forces a family or nation to specialize in the production of those goods and services which it can produce well enough to sell in the open market. To do this, it must conform to the wishes of the market in which it sells its goods and services; that is, it must produce marketable goods and services.

This adjustment to the external market will occur automatically if the prices in the external market have a direct relationship with prices in the internal market. This will allow the external market to direct the use of resources inside the country into uses that are valuable to the external and internal market. If a country can produce some agricultural commodity such as rice, cashew nuts, or cotton at a price and quality that allows these products to be sold on the international market, these products will tend to be exported and the money from their sale may be used to purchase those items not produced in the country. If a product, such as rice can be purchased cheaper on the international market, this fact will be reflected in the price of the imported rice inside the country. If the price of imported rice is lower inside the country than the locally produced rice, rice production inside the country will be discouraged and the resources (people, land, etc.) will be encouraged to produce a product which allow them to earn higher incomes. These incomes will have to be high enough to allow them to purchase the rice they need at the cheaper international prices otherwise they would not have been discouraged from producing rice.

In Guinea-Bissau, prices inside the country are beginning to reflect very closely the prices in the international market. In 1987, the local farm price for paddy (90 GP/kg) represented 68% ($204\text{US}\$/\text{ton} \times 650 \text{ GP}/\text{US}\$ = 132,600 \text{ GP}/\text{ton}$) of the 1987 yearly average value of rice imported into Guinea-Bissau (see Annex VIII for a listing of imports and values). In 1988-89, farm-level paddy prices ranged from 250 to 400 GP/kg. At 300GP/kg, and using an exchange ratio of 2000 GP/US\$, the farm-level price represents 54% of the 1989 yearly average value of rice imported into Guinea-Bissau. Note that 300 GP/kg will translate into a rice price of 538 GP/kg ($300/.65 + 77 \text{ GP milling charge} = 538.54 \text{ GP}/\text{kg}$). This represents 96% of the average value of rice imported into Guinea-Bissau.

Instead of discouraging the production of rice, indications are that certain types of rice production will be encouraged if international prices are allowed to direct rice production decisions in Guinea-Bissau. This can be seen through the following analysis. Rice prices quoted by importers in Guinea-Bissau ranged between 264 and 328 US dollars per ton at the port in Bissau. If we add 22% (see Annex VII for recently reported port fees) to the C&F cost at Bissau to account for unloading fees, we obtain a landed cost in the range of 322 to 400 US\$ per ton. Converting these dollar figures to pesos at the exchange rate of 2000GP/US\$, the landed cost of imported rice is 644,000 to 800,000 GP/ton or 644 to 800 GP/kg. Moving this rice to an inland town such as Bafatá would add at least 25 GP to the value of each kilogram. Then, adding a markup of 10 to 20% for the wholesaler/retailer's margin would result in a consumer-level price between 743GP/kg and 1000GP/kg.

Assuming that rice from Catió were to compete with the imported rice in Bafatá, one can calculate what might be the wholesaler's and assembler's buying prices for rice in Catió. First assume that the retail margin was 10% in Bafatá. This would mean that the Bafatá retailer paid about 669GP for the lower quality rice. Assuming that it costs 50GP/kg to transport rice from Catió to Bafatá, the Bafatá merchant could have paid 619GP/kg for the rice in Catió. Assume that the assembler made a margin of 50GP/kg for handling the rice. Also, assume that the assembler paid 50GP/kg per kilogram of paddy or 77GP ($50/.65=77$) per kilogram of milled rice to have the paddy milled. Then, the assembler would have been willing to pay the farmer 569 GP/kg ($619 - 50 = 569$) for milled rice or 320GP/kg ($320/.65 + 77 = 569$) for paddy. If the national rice was considered to be a higher valued product than the imported rice, the price in Bafatá, Catió, and at the assembly point would be relatively higher. Since local farmers appeared to be willing to sell paddy during the 1988-1989 season for 200 to 250 GP/kg, it seems quite likely that they would be encouraged to grow more at higher prices.

Assuming that this brief analysis is correct, it appears that prices at the farm level are appropriate. They reflect international prices and are sending the proper messages that farmers should consider growing more not less rice. However, this should not be understood to be a clear signal that the GOGB should actively encourage farmer's to grow more rice by putting scarce national resources into production enhancing projects. The international rice market is quite dynamic with very large exporting and importing nations entering and exiting the market quite unexpectedly. For example, in 1989 China reduced its purchases of rice from the world market and this has depressed rice prices during the fall of 1989. An additional factor in the reduction of prices in the fall of 1989 was the entry of Viet Nam into the export market.

With very little scope for predicting the future course of international prices, investing in rice production can be a risky enterprise. If the government encourages farmers to increase their production of rice, the government will be blamed if prices fall and farmers are hurt. This can lead to calls for government support of farmers at a time when government should be using its scarce resources to increase basic facilitatory services. Unfortunately, the support given to farmers, encouraging them to produce an unprofitable crop, will also divert their attention from searching for and producing crops that are profitable. The more reasonable course for government to follow is to spend its

scarce resources increasing the level of facilitory services it offers to all citizens and allowing the market to direct the efforts of producers. If the price of a given commodity falls due to market forces, only a portion of the producers will be hurt. Also, it is likely that they will be prepared to absorb the shocks of the market, if they know they cannot expect the government to absorb the shocks for them.

Improving the roads and abolishing the tax on rice leaving the southern portion of the country should result in an increase in the price southern farmers receive for their product. In our example of the competitiveness of rice from Catió with imported rice in the market at Bafatá, we assumed that the transportation cost from Catió to Bafatá was twice that from Bissau to Bafatá. This reduced the price the merchant from Bafatá was willing to pay for rice in Catió by 25GP. We ignored the tax on rice leaving Catió, but if the merchant had to pay an additional 100GP/kg as a tax, he would have certainly reduced the price he was willing to pay for rice in Catió. The total result of these two factors could have reduced the price the farmer received for rice by 25%. Given the responsiveness of farmers to changes in prices explained to us by local merchants, increasing or decreasing the price the farmers received by 10 to 20% would have made a significant change in their marketing activity. The merchant at Como told us that a difference of less than 10 GP (equal to less than 5% of the price they received) between the prices in Como and Catió would cause the local farmers to sell their product in Catió rather than Como.

Using the visual representation of the site-price model, improving the roads in the south or reducing the tax on rice leaving the south would push the border of the Bafatá market deeper into the southern portion of the country. This would bring more Guinea-Bissauan farmers into the Bafatá market area.

Prices at the consumer level appear to be appropriate. They reflect the cost of the different qualities of rice on the market. Secondly, the prices reflect the cost of providing the services of wholesaling and retailing. In Bissau, the margin between the wholesale and retail levels is quite small, often on the order of 5%. In the rural areas, this margin may be significantly wider; however, this can be explained by the fact that operations in the rural areas are probably less efficient because fewer people are served from a given retail shop.

Thus, it appears that prices are generally appropriate at both the farm and retail levels of the rice marketing channel. The tax on rice leaving the southern area may be one exception to this observation.

- b. Internal commodity price ratios should reflect international ratios

If prices are appropriate, they will reflect international prices and the ratios between the prices of commodities in the external market. The international price ratio of concern in Guinea-Bissau is the ratio between the prices of cashew nuts and rice. As noted above, in the section on the use of market power and credit, this price ratio on the international market just outside the port of Bissau was 2.3 to 1. Once this price ratio is adjusted for the tariff on cashew nuts, the actual, external price ratio seen by merchants is 1.38 to 1. An additional adjustment was then made to reflect the transportation costs between

the rural areas where the cashew trade takes place and the ship at Bissau. Once this final adjustment is made to the external price ratio, it becomes .92 to 1, which is quite comparable to the internal price ratio. The internal price ratio appeared to be changing from .67 to 1 toward the ratio of 1 to 1 due to competition among the major merchants for cashew nuts. Thus, it appears that internal price ratios are beginning to reflect international price ratios.

6. Appropriate places: interpreting the flow of rice using the site-price model

Two of the major questions relating to the movement of rice within Guinea-Bissau are 1) do substantial quantities of rice from the southern portion of the country reach Bissau, and 2) are substantial quantities of rice exported into Senegal or Guinea-Conakry? These two questions can be addressed using the site-price model of marketing costs. The first question is basically a question of the drawing power of the market in Bissau compared to the markets in Bafatá and Gabu. For rice to be drawn out of the south into Bissau the price in Bissau would have to be higher than in Bafatá by approximately 15 GP/kg: an amount that would compensate for the fact that transport from Catió to Bissau is 85 km further than to Bafatá.

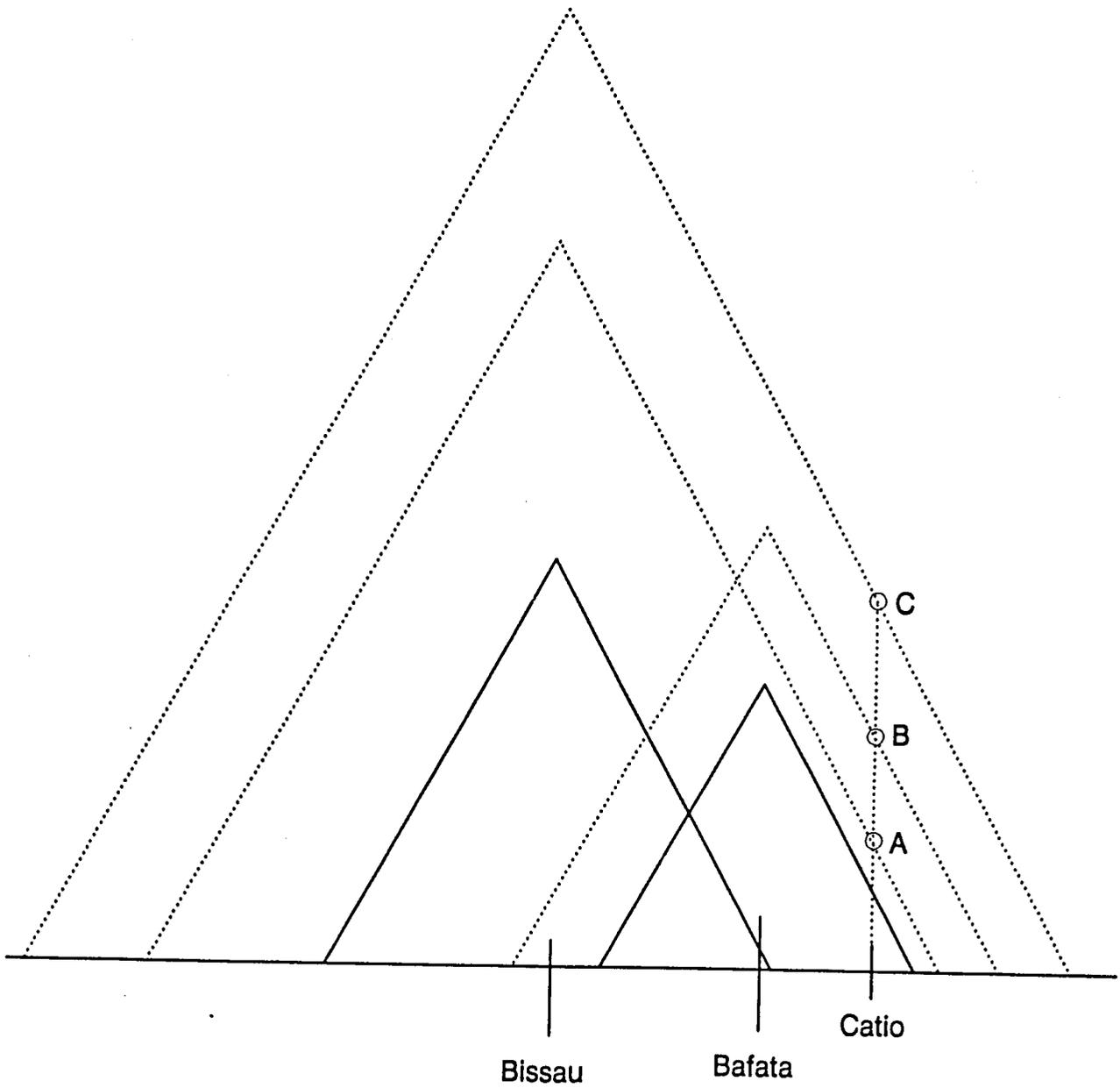
This condition would not exist under most situations since any price increases in Bissau would cause prices to rise in Bafatá by a related amount. This might be especially true under conditions of uncertain scarcity when people may be willing to pay much higher prices and purchase larger quantities than normal. Thus, any price increase in Bissau would be matched in Bafatá until the market there became saturated with rice. When the market in Bafatá became over supplied with rice at the high price, the price in Bissau could begin attracting rice into its market because price increases in Bissau would no longer be matched by price increases in Bafatá.

These two scenarios are illustrated in Figure III-5. As the price in Bissau rises, the price-tent over Bissau rises. This is shown in Figure III-5 as the change from the solid line tent to the dotted line tent over Bissau. The vertical line over Catió indicates where the rice from Catió will be sold. When the price in Bissau first increases, the vertical line over Catió intersects Bissau price-tent at Point A. This would indicate that rice from Catió would most profitably be sold in Bissau. However, as the price in Bissau increases, so does the price in Bafatá. When this happens the vertical line over Catió intersects the price-tent from Bafatá, indicating the rice will be sold in Bafatá. This is indicated in Figure III-5 by Point B. Once the market in Bafatá is oversupplied with rice and the price in Bissau continues to increase, rice will begin flowing to Bissau. This is represented in Figure III-5 by Point C.

Thus, this question may be explained by whether enough surplus, marketable rice is available in the southern region to fully supply the needs of the area around Bafatá and Gabu with a substantial amount remaining for sale in Bissau. The figures used by the Ministry of Plan, Office of Food Security suggest that the marketable surplus in the south is approximately equal to the deficit in the Bafatá and Gabu regions. This would suggest that most of the surplus from the south is used in the Bafatá and Gabu regions and does not reach the city of Bissau.

FIGURE III-5

Effect of Price Increases in Bissau on Rice Movements



A related question is: Why didn't rice from the southern portion of the country pour into Bissau during the period of scarcity during the summer of 1989? To the reasons noted above can be added two additional explanatory factors. First, the scarcity occurred during the beginning of the lean season: a time when marketable surpluses are already scarce in the producing regions. Secondly, the government of the region of Tombali attempted to restrict the flow of rice out of that region. Finally, the fact that much of the rice from the south is marketed in paddy form may have restricted its acceptance to rural areas.

The second question is whether substantial supplies of rice are exported to Senegal or Guinea-Conakry. Again, the answer to this question can be visualized using the "tents" of the site-price model. Assume that a site-price tent is erected over the Senegalese town of Tanaf. The height of this tent will have to be high enough to attract rice from the rice producing areas of Senegal or from the main importation port. Assume, for the moment, that the transport of rice in Senegal is not heavily subsidized by the Senegalese government. Also assume that the roads leading toward Guinea-Bissau are of equal quality as the roads leading toward the rice surplus areas of Senegal. This would imply that the market area encompassed by any site-price tent erected over a Senegalese town would extend an equal distance toward and into Guinea-Bissau as it extends toward the rice surplus areas of Senegal.

Tanaf is especially well situated to attract or supply rice to the Guinea-Bissauan town of Farim. If a circle large enough to encompass Ziguinchor is drawn around Tanaf, the circle would also encompass Bissau. Figure III-6 shows a map of with such a circle drawn around Tanaf. This would imply that Tanaf might attract rice from Ziguinchor or Bissau, depending on rice prices in the two cities and transfer costs. This would imply that if prices were somewhat lower in Bissau than in Ziguinchor, it might be cheaper to supply Tanaf from Bissau rather than from Ziguinchor. If the rice prices in the cities in Senegal reflected international prices, one would expect that prices in Guinea-Bissau were lower than just across the Senegalese border because the towns in Guinea-Bissau are closer to a port of importation than the Senegalese cities. For example, the nearest port to Tanaf is Bissau.

Depending on the height of the price-tent, actually the height of the price, the market areas of some Senegalese towns could extend into Guinea-Bissau and attract rice into Senegal. Unless the Government of Senegal subsidizes rice and its transport to the southern region of Senegal, one would expect prices in Tanaf to be higher than prices in Farim. This expectation was confirmed by merchants in Farim who claimed that rice prices are higher in Senegal than in Guinea-Bissau. On the basis of transportation costs, one would also expect that prices in Ziguinchor are higher than in Cacheu. This expectation was supported by a merchant in Cacheu who told us that Djilas purchase rice in Cacheu for resale in Senegal.

An example from the Farim area will help illustrate the incentive to export to Senegal. The wholesale price of rice from the port of Bissau was probably worth approximately 1,000GP/kg during late November 1989. The rice could have been purchased in Bissau for 1,000GP/kg and trucked to Farim for an additional 50GP/kg. During our visit to Farim, local merchants explained that the price of rice in Senegal was 135CFA/kg. At an exchange rate of 9GP/CFA, the 135CFA

exchanges for 1,215GP. Subtracting the cost of a kilogram of rice in Farim from the Senegalese price yields a margin of 165GP. On a 50 kg sack of rice, this margin would be multiplied by 50 to yield a gross profit of 8,250GP per sack. At this rate, it would be quite attractive for a Guinea-Bissauan to make several trips across the border even if he could carry only one sack at a time. The average laborer's wage in Guinea-Bissau is reported to be less than 50,000GP per month. A laborer working the international market between Farim and Tanaf would only have to make six trips with one sack to earn as much in gross profit.

Based on this analysis, it is expected that rice from Guinea-Bissau is exported into Senegal. The actual amounts that are exported could be predicted if the relationship between the amounts of rice entering the target markets and the prices paid were known. This relationship is called the demand function for the markets. This would be used to predict how quickly the price on the target market would fall as new supplies of rice came into the market. It could be expected that new quantities would enter the market from Guinea-Bissau until the price fell enough to make the business unprofitable. Some limits on the amount of flow could be based on the expected per capita consumption of rice and numbers of people in the markets along the Guinea-Bissau/Senegalese border. Since people have a recurring need for rice, it would be expected that a certain level of flow could enter the markets on a periodic basis.

The data on prices in Senegalese towns were not available during the market research team's visit to Guinea-Bissau in November and December, 1989. However, the team made requests through the USAID office in Senegal to have this data sent to the USAID office in Bissau.

A similar analysis of the region of Guinea-Conakry just south of the Guinea-Bissauan border suggests that the magnitude of exports into Guinea-Conakry is much less than those into Senegal. There are no major towns or villages just south of the border and improved roadways into the country are non-existent. The opinion that little rice is exported into Guinea-Conakry was supported by one of the major merchants and by interviews with the small-scale merchants of Cacine.

SECTION IV

IMPACT OF LIBERALIZATION ON RICE-SUBSECTOR

A. Introduction

The 1986 re-initiation of the economic and market liberalization process has brought about certain positive, transitional and potentially negative impacts on the rice sub-sector. Some of these impacts have already led to reactions at farm, consumer and intermediate public and private levels, others are yet to be fully realized and adjusted too, while others have yet to be perceived and fully understood.

Based on Sections II and III, a summary assessment of these impacts and reactions taken (or potential reactions yet to be taken) by the different affected groups is provided below. Expected future initiatives perceived to be important in terms of their potential impact on production, marketing and consumption are highlighted. Regardless of type, most impacts do have associated issues or concerns which need to be addressed in the near future.

B. Positive Impacts

Positive impacts are those which, as a result of the change, have had or are likely to have desirable economic and social outcomes at farm, market, or consumer level. Though characterized as positive, some of these impacts should be monitored in the future to measure their degree of impact and their potential for ceasing to be positive, that is turning neutral or even negative.

1. Increased rice production

Rice production in Guinea Bissau has accelerated in the last 3 years (see Section II). While the weather, a critical production factor has no doubt been important, the primary reason for a resurgence in rice production has been increased farm gate prices for paddy and milled rice (see Section III). This positive development is very likely to continue at this faster rate, until costs and incentives are balanced.

While increased rice production is no doubt a positive and desired outcome of the liberalization process, the issue in terms of this positive impact is not about the increasing volume of production but rather, where this increase in production is coming from. Since rice production is characterized by region and by type of production (see Section II), the impact of price changes on production will be accordingly different. For example, a *ponteiro* growing mechanized Rock V and floating rice will have a different production function than a subsistence farmer growing plateau rice in the same region of Bafatá; also, a farmer growing mangrove rice (*bolanha*) on the Island of Caiar will again have a characteristic production function reflecting the unique farming system situation on the island. Each will react positive but differently to increased rice prices. Which group, and therefore which region, will accelerate rice production faster, maintain such rate of increase, and thus put the greatest stress on the postharvest or marketing system for rice?

Second, apart from the different farming, cultural, and economic conditions which influence rice production decisions, price incentives are effective only over a relevant range, beyond which additional price increases will lead only to minor or no production increases. Again, each group and therefore each region is likely to have a different point of "negative return" to price increases. The question is, what is this point for each of the systems? Thus, the need to research and understand more about the different rice production systems existing in the nation and their potential reaction to price movements is critical for development and implementation of sound production policy decisions and accompanying postharvest system development.

2. Availability of consumer goods

The privatization of parastatal monopolies (SOCOMIN and Armazens do Povo) has been mentioned as one of the leading factors which has encouraged rice production. A large number of private merchants have been able to deliver wanted "merchandise" to farmers, who have responded by increasing rice production in order to obtain the necessary means to buy the merchandise. Field observations during November and December attest this hypothesis (see Annex 4 for list of articles found in the hands of merchants close to farms).

Continuation of a free market system will no doubt continue to play a major role in farmers' decisions to produce rice as well as other commodities. The issue here is again one of relativity. To what degree was the response in rice production due to years of unsatisfied demand for goods and services and to what degree will it continue? In other words, when will the novelty wear off? Or, is current demand for this type of merchandise high enough to sustain increases in production levels in the future? The different rice production systems will again respond differently to this stimulus. For example, the merchandise listed in Annex 4 is probably less of an incentive to a mechanized rice farmer than to a subsistence farmer growing plateau or irrigated rice.

The point to be made in terms of this positive impact relates to relative prices of agricultural commodities produced and sold by farmers and consumers goods purchased. How much more effort and time are rice farmers willing to contribute in order to purchase desired "merchandise"? Will at one point this stimulus, except for basic consumer goods, run its course, or will there be other consumer goods which will continue to incentive all rice farmers? Periodic farm surveys of farm gate prices and consumer goods prices would be useful to ascertain changes in the economic conditions of farmers and their likely response to additional stimuli of this kind.

3. Rice as a medium of exchange

The increase and free availability of national as well as imported rice has contributed to a second round of farm production increases in those commodities which are traded for rice, such as cashews, palm kernels and oils, peanuts, honey, bees wax. For example, the competitive ratio of rice for cashews has decreased from 1 kg of rice per 2 kg of cashews to 1:1. That is, cashew farmers have been able to demand increasingly higher levels of rice for the same amount of cashew sold. This positive shift in the exchange value of cashews has

encouraged additional production, as demonstrated by new and rehabilitated plantations.

The question is, at what point are cashew producers going to have enough rice, and will want to have money or some other commodity in exchange for their cashews? At that moment, the need for a stable currency becomes critical, otherwise cashew producers may stagnate, if they do not gain ready access to those commodities they now desire. This also implies that, once this point is reached, other market outlets for rice must be found or be ready to absorb these excess quantities.

4. Free entry and exit of market agents

Another consequence of the liberalization process has been the opportunity for free entry and exit of market agents into and out of the marketing system for agricultural commodities and consumer goods. The number of agents has increased from 2 parastatals to thousands of merchants at farm the level (retail/small assembly), hundreds at intermediate levels (retail/wholesale/larger assemblers), dozens at regional levels (large wholesalers) and less than 50 at the import/export level.

The impact of this increased number of marketing agents and organizations has been very positive. The increased competition among agents, specially close to the farm level for clients of consumer goods and suppliers of agricultural commodities (that is farmers) has (1) led to higher farm gate prices, (2) increased farmer's bargaining power, and (3) increased overall efficiency and effectiveness of the marketing system. Efficiency reflects the costs and margins associated with the delivery of consumer goods and services and the assembly and distribution of rice. Effectiveness reflects the ability of the market system to deliver consumer and agricultural goods and services at the right time, form, and place. Field visits, discussions, and brief surveys undertaken by the authors during their stay clearly indicate that keen competition among merchants at all levels is, at this stage of market development, providing effective and efficient results both in the input delivery and product marketing systems.

The issue related to this positive impact concerns itself with the future structure, behavior and performance of the input and product marketing systems. Private sector market agents are evolving and establishing linkages, trusts, and relationships at all levels. To what degree will the existing competitive forces be maintained or reduced, once market players consolidate? Where will bargaining power shift to? For example, marketing and production credit is being offered by private merchants (no other sources exist at the moment), oftentimes at no cost to rice farmers (1 kg of rice during the lean season is repaid with 1 kg of rice at harvest). This "free" credit is given in order to maintain a farmer client and avoid losing him to a competitive merchant. As inefficient merchants fall out, how will this 1 for 1 credit term change and in whose favor, specially in the absence of other credit sources?

5. Rice processing

Since 1983 (before the liberalization process started) a total of 36 small rice mills (250 kg/hr milling capacity) have been sold by DEPA to villages in the

surplus region of Tombali and Quinara (see Annex 5). For many social and economic reasons, these rice mills have found ready acceptance at village level. Since 1986, the additional incentive of a positive marketing margin for milled rice has apparently increased the requests for additional mills in the South.

This value added incentive close to the farm level has generated a series of positive impacts and ramifications which have yet to be fully analyzed and understood. Those that could be identified by the team in those villages having rice mills include (1) release of labor for other productive enterprises due to milling efficiency gains, (2) generation of rural wealth which is being channeled to other productive uses, and (3) increased potential for village level marketing organizations. These three impacts are discussed in more detail in points (6), (7), and (8) below.

6. Release of rural labor

The successful introduction of rural rice mills at the village level has resulted in rural labor being released for more productive enterprises. More specifically, the labor being released comes from women who no longer have to pound rice 2 to 3 hours per day. In the South where rice is eaten every day of the year this would translate into 60 to 90 woman days per year of released labor per "pounding" woman (assuming 12 hours per day, since women get up at 4 in the morning to pound the first rice of the day, a process repeated once or twice more during the day).

In some instances, this released labor has been channeled into more productive uses such as additional rice cultivation and merchandising, as well as into recreation (taken from observations and discussions during field trips). For example, 45 women banded together in one village to form a merchandising organization. Each contributed GP 1,000 to the enterprise in 1986 to purchase palm kernels for sale in Bissau, and returning with merchandise to the village. Since then, their working capital has risen to over GP 1 million. Scientists at DEPA are considering the potential for rural education programs, now that women (at least those in village having rice mills) have the time to attend schools, along with their children. Another group of women is considering setting up a retail/storage operation in one of the villages to sell consumer goods and store rice for the lean season.

The introduction of small rural rice mills has provided farmers with the means for channeling some excess rural labor into more productive uses outside the rice post-production system. Introduction of additional labor saving technologies will lead to additional economic and social gains for the rural sector. The potential for complimentary labor saving technologies within the post-harvest system which would increase the efficiency of threshing, cleaning, drying and storage (reduction of losses) need to be explored in terms of their adequacy for the different rice production systems in GB.

7. Increased rural wealth

Another positive impact brought about by the successful introduction of rice mills in the Southern region has been the generation of "pockets" of rural wealth where the mills are located. These localized increases in wealth have been

generated from custom milling charges (see Section III for concerns regarding milling charges and full cost recovery). Some of these successful operations have generated considerable amounts of cash (some in excess of 1 million pesos) which are kept within the village and used for small village level credit lines. While these local credit lines are apparently operated on a profitable basis (interest costs are charged), they are not available for the general economy or commerce.

Other examples of potential uses mentioned for the working capital thus generated include (1) rice mill replacements and additional rice mills, (2) outboard motors for fishing pirogues and water transport (enabling fishermen and transport to become independent of tidal action), (3) small trucks for rural transport, and (4) school buildings.

The reason for this unfortunate gap between this nascent rural wealth and its potentially more productive use within the rural as well as in the general economy, is the lack of a rural banking system which would absorb this wealth and mobilize it in a more efficient manner by making it available for other uses and a wider clientele.

8. Potential for village-level marketing organizations

So far, the marketing system that is evolving is mostly being generated from above, that is from the larger import/export merchants, down through intermediates to the farms (see Section III). However, the potential for village-level marketing organizations has already been demonstrated by some successful entrepreneurship led by women whose labor has been freed by the introduction of rice mills at the village level.

As the marketing system evolves, further marketing possibilities for village-level organizations include (1) installation of additional rice mills, (2) improvement of rice milling operations to take advantage of market differentiation via quality variations, (3) commercial custom milling, (4) linking merchandizing of milled rice to the needs for consumer goods in the village, and their provision, (5) rural transport enterprises, and (6) improved utilization of milling by-products (such as brewers' points and bran) in animal feeds.

9. Increased availability of transportation services

Another positive impact of the liberalization process has been the increase supply in transport capacity, specially trucks. The large number of trucks imported since 1986 has facilitated the evacuation of rice from the South and the provision of consumer goods to the region. Also, the keen competition among trucking firms and independent operators has made this possible at very competitive rates (to what degree this has been dampened by the awful state of the road from Bambadinca to Cacine and Catió is not known; this main road is however being upgraded and should cease to be a factor in the near future).

The issue in regard to this positive impact is twofold. First, trucking rates being charged today do not seem to reflect full replacement costs (see Section III). If this continues to be the case, then the potential for a future

bottleneck in transportation is very real, once the current fleet of trucks is beyond repair (which is another issue) and no replacement units are available. However, in an open economy, such as it exists in GB, demand for and supply of transportation should align themselves as excess transportation supply is removed from the market, and freight rates are gradually adjusted to reflect full cost of truck transport.

Again, monitoring this situation with periodic checks of freight rates for trucks, cost structure of rates charged, seasonal utilization rates, hauling volumes and types of loads, as well as primary and backhaul conditions would provide the necessary information to prepare for additional provision of the right number and type of trucks in the future.

Second, and perhaps more important, transportation firms and operators have concentrated on inter-city and inter-regional hauls, while rural transport needs have yet to be met efficiently. The lack of rural transportation means was the second most often mentioned problem for merchants at that level. Rural assembly of paddy and milled rice is made even more difficult by the lack and adequacy of penetration roads. Very few small trucks (less than 5 tons) are yet available (those available are controlled by large import/export merchants and their intermediaries), and assembly and distribution in the rural areas is still very much undertaken by humans and animals (walks of up to 30 km are not unusual). Furthermore, the use of animals power in the South is limited by the presence of the tset-se fly in certain areas.

The improvement of rural transport through upgrading of penetration roads, access to small trucks by intermediate and independent merchants, groups of farmers, and to motorbikes and bicycles by smaller merchants, would greatly reduce the assembly and distribution costs associated with rural transport.

10. National-international commodity cross-price relationships

The liberalization of the economy has permitted the national market to become more reflective of relevant international commodity prices. Consequently, a twofold positive impact is being felt within the agricultural sector. First, as cross-price relationships of traded commodities become more realistic, a second trend to more rational use of resources within the agricultural sector begins to take place.

For example, the cross-price relationships between rice and cashews, peanuts, oilpalm kernels, palm oil, honey, and bees wax are now competitively established as a function of their international prices and the competitive environment within the country. As a result of this open market competition, the barter relationship between rice and cashews (the most important export item) has dropped from a pre-liberalization exchange ratio of 1kg of rice for 2kg of cashews to 1kg of rice for 1kg of cashews. As a consequence, if this relationship is not altered artificially, more rice and cashews would be produced over the long-run. Cashew production is an incentive due to its foreign exchange earnings capabilities, and more rice (having become less valuable in terms of cashews) needs to be produced to buy the increasing amounts of cashews. This scenario must be qualified for two reasons, first there is a 40% export tax on cashews which alters the direct relationships between national and international

prices, and second there is no guarantee that rice will continue to be traded for cashews over the long-run (see point 3 above).

The liberalization of the economy, input and product markets within the country, as well as imports and exports will contribute to the best possible resource allocation within the most important economic sector of the country, namely agriculture. The future concern in terms of this positive impact is the development of capabilities to monitor trends and developments to enable public and private sectors make opportune and appropriate policy, investment, and marketing decisions.

C. Transitional Impacts

Transitional impacts are those which are considered to be temporary and which are either in need for closer review and analysis to assure their impact will continue to be positive, or are likely to work themselves out as time passes, and therefore should not command much time and effort. Two transitional impacts could be identified as needing closer and immediate attention, while one was identified as having been very temporary in nature.

1. Evolvement of a private sector rice marketing system

A radical change in the rice marketing system took place as the role of AP was reduced from that of a public rice trading monopsony/monopoly to a public sector firm competing with many other private enterprises. An additional and last impact will be felt as AP is totally privatized in the near future.

The private sector firms are in their third year of evolution and in the process of learning to merchandise, process, store, and distribute paddy, rice, as well as other goods and services. This requires establishing marketing linkages (national and international) to discover (market research and development) and keep most economic suppliers of raw commodities and profitable outlets for final goods and services; establishing credit lines for working capital, facility, and equipment financing; planning and acquiring needed processing and storage facilities and equipment; obtaining appropriate and economic transportation means; establishing means for communications and market information; personnel training; and learning about competitors and their plans for the future.

Left to their own means, and with the assurance that an open market economy will continue to be a fundamental government policy, private sector participants will learn how to address these challenges successfully and efficiently, and in doing so will contribute effectively to the transformation of the existing subsistence rice economy (except for imported rice) into a market oriented production system.

The issue of concern in regard to this transitional situation has to do with the eventual structure, conduct and performance of the private marketing system that is evolving for rice, other agricultural commodities, inputs, and consumer goods (the apparent current structure, conduct, and performance is contained in Section III).

The positive contributions of this system far outweigh the potential negative impacts at this stage of development. This system has revived the rural sector

by providing credit, inputs, and consumer goods at competitive prices and ready outlets for agricultural commodities at favorable prices for farmers. Urban consumers, who through crade have now easier access to food sources and commodities, have also benefited. The most important traditional export crop, namely cashew has been an incentive as reflected by the recovery of old plantations and the planting of new ones. Rural transport is improving by the introduction of small trucks appropriate for existing rural infrastructure and haul volumes.

On the other hand, this emerging structure has the potential for developing undesirable trends. For example, marketing credit (the most often mentioned problem by intermediate and small traders) has been provided by the import/export merchants all the way down to farmers through intermediate merchants. Such credit is limited and source binding. While it implies that certain risks are assumed by those providing credit it also implies that bargaining power and market control might be shifted to the providers if no other credit sources are eventually made available. Whether this situation will evolve into a monopsony/oligopoly situation is yet to be seen.

The second most important bottleneck mentioned by intermediate and small traders, as well as farmers was transportation. While this situation is being improved through the provision of small trucks by the import/export merchants, the conditions of this type of capital investment are again very limited, and therefore very source binding. While the provider is assuming risks by lending in kind, the credit conditions are in his favor, given the 1 year in-kind (cashews, palm kernels and oil) payback provision. Under these conditions, those able to borrow are tied to that source, and those unable to borrow have no other alternative. Again, since the amount of transport was critical, and continues to be a constraint, this type of credit in-kind has very positive impacts in the rural economy. It is, however future developments that need to be monitored.

In order to strengthen this positive transformation, periodic assessments of the impact of the liberalization process on the emerging structure, conduct and performance of the rice production and marketing system should be carried out. Periodic updates of this kind will enable policy planners to spot undesirable trends early enough, to plan for and implement appropriate policy changes and strategies.

2. Appropriate new role for public sector

Even under the best conditions, the private sector cannot carry out all the necessary activities required to develop a responsive, effective, and efficient rice marketing system. Some of these activities, because of their very nature fall squarely within the domain of the public sector.

Since the participation of GOGB in rice marketing has changed from an active and complete monopsony/monopoly to that of one among many, and will continue to change to an even more passive participation, the question that needs to be addressed now is "what should be the appropriate new role for the public sector", once the transition is completed with the privatization of AP?

If recent changes are an indication, the potential new role for the public sector could be characterized as (1) framework setting and (2) facilitating in nature, to support the private sector's active role in rice marketing.

a. Framework setting

The new public role and participation will be defined to a great extent by the fundamental rice or cereal policy that the GOGB needs to adopt for the country (no definitive policy statement and strategies were identified during conversations and interviews with public and private sector representatives). A fundamental policy can be understood as the basic objective that a nation has for a given commodity or group of commodities in terms of its social/economic values. For example, for rice in GB, the fundamental policy objective might be to "provide sufficient rice for the population at reasonable market prices".

A policy framework can be understood as the strategies which identify the means and ways for implementing the fundamental policy, that is, how is the nation going to achieve the policy objective. Alternative strategies or ways need to be explored and analyzed, to select the one which makes best use of available resources. Some resources may be ready and available (land, labor, and some capital); other resources may have to be developed or strengthened (for example, all those associated with the post-production system, and institutional development to analyze, plan and execute policy strategies). This process would also clarify the "rules of the game" for both the public and private sectors, as well as their respective roles and functions.

b. Facilitating services

Aside from the need for a fundamental policy and the selection of "best" strategies, thus setting the institutional environment (rules of conduct and responsibilities) for both the public and private sector, certain market facilitating services are essential for the private sector to develop an efficient and effective rice marketing system. Among those which need to be strengthened or developed are: (a) construction of needed infrastructure, (b) provision of supply, market, and demand information, (c) provision of sufficient marketing credit, (d) definition and implementation of uniform commercial laws and regulations, (e) establishment and monitoring the use of grades and standards, and (f) definition and monitoring of standard weights and measures.

In many instances there is a total lack of these facilitating services, and when available, their quality is subject to doubt, or their effectiveness is diluted by public actions still taken based on pre-liberalization rules and regulations. Clearly analyzing, prioritizing and adjusting these market facilitating functions, and setting processes in motion for improving or initiating them can be done once a definitive cereal policy and framework have been established. In the meantime, remnants of pre-liberalization times should be further diluted or eliminated as soon as feasible.

(1) Infrastructure

Infrastructure constitutes the means and ways which provide the connection between a source (rice farmer) and a destination (consumer). Provision of such

infrastructure includes (1) main highways, (2) rural roads, (3) rural penetration roads, (4) bridges, and (5) communication systems (telephones, telex, fax).

The existence and quality of such infrastructure will affect the efficiency with which agricultural commodities are transported from surplus to deficit areas, and therefore impact on prices received by farmers and paid by consumers. Whether farmers have timely delivery of needed inputs will affect production decisions and costs. Finally, efficient communications are essential for opportune and sound decision making at all levels of the rice-subsector.

Continued improvements in physical and communications infrastructure, specially in the South will be one of the major contributions to increased rice production and efficiency in the rice post-production system.

(2) Rice supply, market, and utilization information

There is a dearth of vital information on rice production, marketing and utilization, without which policy formulation and strategy implementation will remain very haphazard and sub-optimum. Specific issues and needs are summarized below:

- Rice production: FAO has initiated technical assistance to implement an area frame sampling system within the MOP in order to track production of rice (area, volume, yields) and of other agricultural commodities; this effort is critical, very encouraging and should be further supported. Up till now the basis for agricultural production estimates are based on the only agricultural census, taken by Amilcar Cabral in 1955.

- Production costs: The issues of comparative advantage and self-sufficiency are critical for sound design of cereal policy strategies. Representative production costs and benefits by type of rice production is basic for discussing these 2 issues. The team was unable to find any information on costs. Research in this area would be a natural extension to the FAO project cited above.

- Rice utilization: Except for the general knowledge that rice is the most important staple food in the country, hardly any other facts are known about it. Final rice utilization consists of (1) seed use, (2) losses, (3) human consumption, (4) industrial use, and (5) exports. The only utilization factors for which reliable information is available (albeit not readily) are imports and industrial use (beer manufacturing). Seed use and losses are given combined as 15%, and are not based on any scientific analysis of either factor. Human consumption is based on a theoretical daily caloric need which has been converted to 300 grams per day or 110 kg per head per year. There are no statistics on presumed exports or re-exports of rice to neighboring countries.

- Rice marketing: The type of marketing information which needs to be collected analyzed and disseminated through various means and at

opportune time intervals include (1) prices and volumes marketed at different marketing levels (farm gate, different towns and key villages) and appropriate time intervals, (2) processing yields and costs, (3) storage costs and losses, (4) transportation costs, (5) relevant border prices and neighboring countries' rice policies, situations, and outlooks, and (6) international information on rice situation and outlook.

Formulation of sound cereal policy and strategies will require better information on these factors than what is presently available. Further institutional strengthening and additional studies will be required.

(3) Marketing credit

For a marketing system to perform efficiently and in balance with the input needs of the production system and the agricultural commodities it provides, sufficient credit must be made available for the functions of merchandising (buying, pricing, selling), transportation (assembly and distribution), storage (paddy and milled rice), and processing (rice milling).

The lack of sufficient credit was mentioned as the most important bottleneck for marketing. While some credit is now being provided by the merchants themselves, this type of credit is rationed and source binding. Credit rationing can result in inefficient marketing of rice and other commodities as exemplified by the use of IOU's between first assembly merchants and rice farmers, lost or delayed sales, constraints on growth by individual merchants, and potential loss of economies of scale. Source binding can lead to lost bargaining power at certain marketing levels, especially at the first assembly and intermediate levels, and to barriers to entry into marketing by those without access to this source of credit.

The lack of sufficient marketing credit (and probably production credit as well) is exacerbated by the lack of a rural banking infrastructure and associated services. This deficiency not only constrains the required growth in marketing activities, needed to be balanced with production, but also negates the more efficient use of the nascent rural wealth which is being accumulated in many villages all over the nation. For example, in the South over 30 villages have accumulated a certain degree of wealth due to the successful introduction of rice mills; in other parts of the nation the sale of palm kernels and cashews provide other sources of rural income which are not being tapped.

For the agricultural marketing system to develop at par with the production system and for the rural sector to benefit more from the economic recovery of the nation and develop and expand additional rural enterprises, a rural banking system must be developed and implemented as a principal foundation of a market oriented agricultural production system.

(4) Uniform commercial codes and regulations

Marketing efficiency and effectiveness is also supported with uniform, or universal commercial laws and regulations which simplify and expedite business transactions, protect participants and consumers from fraudulent actions, and

provide a legal system to redress situations in which one or both parties suffered a loss or dissatisfaction. These laws and regulations should be characterized by their uniformity, simplicity, and consistent application without exemptions. What these should not be designed to do is to control or otherwise restrain the system from carrying out its assigned and proper role as formulated under the policy implementation strategies.

Although the liberalization of the economy was undertaken by decree which annulled all previous laws and regulations designed for the previous state control marketing system, certain remnants from the previous system and a new tax on rice movements from the South have the potential for reducing the efficiency of the rice marketing system, and creating disadvantages for private sector participants. A review of their relevance and appropriateness, given the changes in the marketing system could be helpful in finding changes which would further enhance the conduct and performance of the emerging private sector marketing system. Those identified by the team during field visits and conversations with public and private officials are summarized below:

- Rice taxes: The liberalization of rice marketing opened new opportunities for private merchants to evacuate rice from the South for sale in deficit areas in the North of the country or for export. The competitive efforts provided farmers with a very lucrative situation for selling their rice crop. In the crop years 1986/87 and 1987/88 apparently too much rice was sold in the South so that this surplus region suffered from rice shortages during both lean seasons, an unprecedented situation.

Local concern with these shortages prompted the regional public sector to start imposing a "Rice Tax" in order to control and reduce the flow of rice from the region. The initial tax was GP25/kg for paddy and GP50/kg for milled rice. This tax was increased on August 9, 1989 to GP50/kg for paddy and to GP100/kg for milled rice. Another measure taken to prevent rice shortages during the 1988/89 crop year was to require merchants to keep a "reserve" of rice in their stores, specifically for local sales. Since no rice shortages occurred during the lean season of the 1988/89 crop year, the program was declared a success, and the major reason for having enough rice throughout the year. The information on volumes, shippers, destinations, and use of this tax revenue is kept at the regional level.

Both pros and cons can be argued. Whether the rice tax and the forced reserves measure were instrumental in keeping sufficient rice in the South during the lean season of the 1988/89 crop year is arguable. After the extreme shortages of rice in deficit areas of the country during the month of July and early August, enough rice imports come into the country to fully satisfy demand for several months. This imported supply could have very well pushed local rice from the urban markets, specially during the critical months of September and October. Furthermore, this imported rice created an oversupply on the market at the beginning of the harvest, and

farmers unable to sell rice at expected price levels of GP1,000/kg of milled rice.

The forced reserve stocks of local rice were ineffective in that only one merchant in Catió apparently complied with the order. Since the market tended to ignore or circumvent the order, the contribution of this measure to maintain enough local supplies of rice within the region is highly questionable.

A direct negative impact of the tax measure is the additional time and effort that it takes for a merchant to have his shipment weighed and loaded under supervision, and registered before he can move his commodity. Road checks along the highways and at the ports to check for the evacuation permit are additional bureaucratic steps that need to be satisfied. Also, the additional tax adds to the gross margin that merchants will charge to cover all transaction costs. The current tax on rice is about twice the cost of transportation.

On the plus side it can be argued that the tax generates local revenues which can be used locally, independent of federal provisions or restrictions. Due to lack of processed information no numbers could be gathered on amounts of revenue generated and utilization.

- Rice tax exemptions: At least two exemptions from the rice tax could be identified during field visits to the South, namely AP and absent landowners who evacuate rice for their own consumption. These two exemptions can be viewed as highly detrimental to the private sector rice marketing. First, AP is still a public enterprise in competition with the private sector, and this exemption gives it a gross margin advantage over competitors. Second, absentee land owners who evacuate rice for their own consumption have no set limits on what constitutes "own or private consumption". The incentive to register as an owner to evacuate rice under the guise of private consumption exists. Since time did not permit the team to gather all the information on amounts of rice evacuated under this provision, the impact of this exemption cannot be estimated.

The existing rice tax and these 2 exemptions are suspect and not conducive to fair marketing practices and market efficiency. Their positive and negative contributions should be reviewed and reconsidered in terms of their intended objectives, actual impacts, and legality.

- Bureaucracy: Another remnant of the pre-liberalization period can be encapsulated in the term known as bureaucracy. Some of these bureaucratic obstacles to efficient rice marketing as well as other agricultural commodities are related to (1) transport permits, (2) coastal transport, (3) commercial licenses, (4) and road checks. Some of these have already been mentioned in relation to other

related bottlenecks. Additional comments and observations are listed below.

The time and effort needed to clear bureaucratic requirements in order to ship, say 10 tons of paddy or rice from Catió to Bissau is overwhelming, specially when the transport mode is coastal. Starting with the "Guia de Circulacion" which records the amounts taken out and the taxes paid, additional permits are required to load the boat, dock at and leave Bolama, dock at Bissau, unload the vessel, and transfer the cargo outside the port area. Additionally, payments must be made to the port master and the "boys", whether they are needed or not. Basically the "system" does not work as one, but rather as a patchwork of personal contacts, which does not necessarily treat every merchant in the same fashion.

The requirement for a commercial license to undertake commercial transactions is desirable from a regulatory and perhaps fiscal point of view, since in the absence of an effective tax collecting system, the issuing of licenses can be a very effective way of generating needed revenues. The current system, however for issuing and regulating licenses may not be very conducive to efficient marketing of agricultural commodities and merchandise.

Licenses can have undesirable side effects such as (1) effectively blocking entry into the marketing system if the cost of the license is set too high, (2) creating unfair competitive conditions if official exemptions are allowed, (3) putting licensed merchants at a disadvantage if unlicensed merchants are free to enter and exit the market place, and (4) failing to generate the expected revenues if an appropriate regulatory and collection system is not in place.

It is the authors' opinion, that perhaps with the exception of point (2) above, all others should be closely reviewed and assessed. The tariff used for issuing licenses ranges from GP 600,000 to GP 5,000,000 per year, depending on the volume and type of commercial operation. It is possible that fees may be blocking applications which represent lost revenues and contributes to the number of unlicensed merchants in the system, thus creating competitive disadvantage for those that can afford the license. A reduction in the cost of the license might even generate more revenue, if the current tariff schedule is a factor in keeping potential merchants outside the formal system.

A streamlining of the bureaucratic process for obtaining a license seems to be warranted. For a license to be issued, a chain process is undertaken, starting with the local authorities, where the merchant is located. If local approval is granted, the license request is forwarded to Bissau where MOC issues the licenses. MOF at Bissau is advised by MOC that such license has been issued; MOF forwards such information to its regional offices which are responsible for collecting the annual dues at the local level. Communications between local authorities and head offices in Bissau,

and between Ministries at the national level have apparently not been able to keep up with the request for licenses. For example, one regional representative of the MOF received the last updated list on issued licenses in 1987, making it impossible for the local office to collect the annual fees for licenses issued since then.

(5) Grade and standards

During field visits, interviews, and discussions, indications were received that the use of "rice standards" was commonly used for marketing purposes. These standards seemed to represent desired quality factors, reflecting size of grain and cleanliness, and therefore market price differentials. Such use of standards apparently fell into disuse during the war of independence, and has not been reintegrated in a formal way into the rice marketing system.

The use of informal standards, was however observed in the current marketing system for rice, where price differentials are being charged for different rice qualities. The quality factor is the percent of broken grains contained in 1 kg of rice, which can range from 100% broken rice kernels (imported Pakistani rice) to about 35% broken (other imported rice). For locally produced rice the degree of milling, that is how much bran is left on the endosperm seemed to be the most important quality factor, as well as whether the rice is new (current harvest) or old (last year's harvest), which is apparently determined through the odor of the rice.

The most important advantage of having these informal standards are their relevant application for daily market transactions, where buyers and sellers agree on a fair market price for quantities sold and bought at a given place and time. However, the very fact that they are informal generates a series of problems for other market transactions when time and place do not coincide, and for the assembly of market information, market analysis, and the generation of reference material.

Because of their nature, informal standards are subjective, and therefore subject to constant adjustments depending on current market supply and demand conditions. When supplies are plentiful, buyers become very quality conscious and demand higher quality for the same price than otherwise. When supplies are short, buyers tend to become less quality conscious, and pay higher prices for lower quality than otherwise. The first scenario penalizes suppliers such as farmers selling during harvest season, while the second scenario is detrimental to consumers who have to pay dearly for inferior quality of rice.

Market information on prices and volumes at different market levels and time intervals is an essential information for the analysis of market behavior, conduct and performance. Without a formal rice standard or "mean quality" it becomes impossible to define precisely the relationship between quality and price, and therefore the exact impact of market shifts, say on producers and consumers.

Processors would have a difficult time producing milled rice for a constantly shifting informal market, and might be discouraged to invest in further equipment needed to take advantage of market differentiation. Buyers and

sellers would have a difficult time agreeing on future delivery contracts if the quality base on which price is based cannot be agreed on in advance and deviations from it adjusted to.

While not "terribly" important at this stage of market development, research into informal rice quality standards being used today and development of formal standards for future introduction, will go great lengths in facilitating the development of a true market oriented rice production system in the country.

(6) Weights and measures

Similar to grade and standards, universal weights and measures tend to facilitate market transactions and reduce costs. The encouragement of adopting standard weights is again not as critical as some of the other issues discussed in this paper. Nevertheless, research into the different volume measures now being used in the country would provide the kind of base line information needed to begin planning the formalization of this marketing tool.

3. Reduction in atomistic competition

A final transitional impact did apparently result in a considerable initial increase and subsequent reduction in "atomistic" competition among merchants at the first assembly level (first marketing stage between farm and market system). Since no comparative annual figures exist, the initial increase and subsequent reduction cannot be estimated (according to the MOC over 3,000 merchant licenses have been issued).

Apparently an initial opportunity for profitable employment was taken seriously by many citizens, and many licenses were issued. This opportunity was apparently enhanced by the seasonal price fluctuations which were exacerbated by the lack of rice during the "lean" months of the year, which induced a large number of persons to enter the market as unlicensed merchants. However once the rigorous reality of "being a merchant" became apparent many of the unlicensed and licensed merchants withdrew from the market. As the system continues to shake itself out, the withdrawal of inefficient merchants, will help reduce the characteristic inefficiency of atomistic competition, namely low volume-high cost.

On the other hand, a reduction of merchants at first marketing stage below a certain level would create the possibility for a few to obtain enough bargaining power to influence market prices in their favor. Field observation by the team lead to the conclusion this is not the case, and in the author's opinion is not likely to occur in the near future.

D. Negative Impacts

Negative impacts are those which have a potential for generating undesirable economic or social situations. They should draw the immediate attention from policy planners and should, therefore be monitored very closely.

1. Higher consumer rice prices in urban areas

For the liberalization process to work, it was necessary to change or adjust many macro-economic variables, macro prices, as well as monetary, fiscal, and revenue generating policies. Two of the changes which carry a high potential for negative impact on low income urban dwellers are the devaluation of the peso and the elimination of rice subsidies for public employees.

The impact of the peso devaluation has been and continues to be passed on to urban consumers as an immediate reflection of world market prices for rice. In May of 1987 one kg of rice (100% broken) sold for GP 125/kg in Bissau. Since the drastic devaluation of May 1987 of 154 percent, the peso has continued to be adjusted. Today, the same quantity and quality of rice retails for GP 1,000 to GP 1,200 in the city. Thus, in 2.5 years, the current retail price of rice in the capital city has increased by 700% (see Annex 6).

Public employees were entitled to buy a certain amount of rice per month at heavily subsidized prices. As late as December of 1989, public employees could buy their allotment for GP 65/kg, while retail prices were already close to GP 300/kg. As of January 1989, the price subsidy public employees were entitled to no longer exists. As a result, this segment of the urban population saw their rice consumption costs increase by 1,435% between January 1988 and November 1989. In the meantime the GOGB has increased the salary of the lowest paid employees by 37%.

The negative impact of these changes on a national scale was mitigated by the fact that over 80% of the population is rural and thus not entirely dependent on rice purchases, and with access to substitutes such as millet, corn, and sorghum. However, the same cannot be said for urban dwellers, specially those low income groups which do not have easy access to close substitutes.

Realizing that rice is not only the most important food item in the national diet, and that close substitutes may not readily available for the urban population, the negative impact of these two macro changes on this population group cannot be negated or easily set aside. However, without any household income, budget, and consumption survey information it is next to impossible to estimate the true impact. Monitoring mechanisms and policy strategies should be considered to ameliorate the situation of this population group if rice prices continue to climb, and/or income levels continue to lag behind.

Two final interesting observations should be followed up and analyzed in the near future. First, while the high per capita rice consumption is a fact of life (albeit yet to be proven by a statistically sound survey) the frequency of rice consumption may be changing. On many occasions, the team was told that rice was consumed 3 times per day. However, during visits to market areas, restaurants, and other urban gathering places, the consumption of wheat flour bread was conspicuous. For breakfast, a piece of bread (GP 200/large and Pg 100/small) with margarine was the standard fare, rather than rice. Whether this observation implies a shift in eating habits (as a result of rice price increases) or has been the case for longer periods of time could not be ascertained. In any case, increasing flour imports could be an indication of some consumption shift taking place.

Second, intrafamilial support of urban dwellers by rural family members through "rice gifts" is an active component of the rice marketing system in Guinea Bissau (see Section II and III). Sizable gifts of 1 to 3 sacks weighing 50kg to 60kg were mentioned as standard when urban family members came to visit the farm. Whether or not this customary habit will change or not is impossible to predict at this stage. However, it is possible that urban family members might increase their reliance on these gifts, given the rise in rice prices and the abolition of public subsidies. What impact if any this might have on the commercial system is subject to question. Perhaps more important, is the safety net that this custom provides to dependent urban dwellers and its contribution to social stability in the face of this negative impact. It is from that point of view that this phenomenon is of interest to policy planners.

2. Effects of intra-seasonal price fluctuation

Normally, agricultural commodity prices have a characteristic seasonal price pattern which reflects the changing supply and demand situation within an agricultural cycle or season. Typically, the lowest price level occurs during the harvest period when local supplies exceed current demand and the commodity must be stored for later sale. Conversely, the highest price levels are reached during the "lean" season before the next harvest when local supplies are low but demand level remains unchanged.

A normal seasonal pattern of this kind sends useful price signals to producers, marketing agents, processors, distributors, and consumers enabling them to make sound decisions on the timing of buying and selling, length of storage, degree of processing and distribution. For example, farmers may withhold a certain amount of rice from the market in expectation of a higher price one or two months later in the season. This expectation itself can contribute to more stable production as well. Merchants may store rice for period of time, if they perceive that the seasonal price change will be enough to cover storage costs and financial risks taken. Processors may vary their quality mixes and therefore prices depending on the supply and demand conditions; thus when supply is plentiful customers are very quality conscious, and the opposite is true when supplies are scarce. Finally, consumers can make choices in terms of quality and quantity purchases as the seasonal conditions change.

This intra-seasonal price pattern can be interrupted or skewed to extremes when the normal supplies do not arrive on the market as expected, or when needed, thus causing price peaks which can be detrimental to certain segments of the population. In turn, these abnormal price peaks can send the wrong message to producers and tend to create "speculative" conditions in the market place (market conditions of July-August 1989).

When these extreme conditions occur, there is a general "urgency" for governments to "intervene" through certain market interventions which are designed to mitigate the undesirable supply/demand condition and its perceived negative impact on "consumers". At their extreme, these interventions, achieved at high costs, result in little or no "normal" seasonal price changes which are also counterproductive since they decrease the incentive of producers to produce rice for commercial purposes and for the private sector to participate in the marketing process.

Given the recentness of events in Guinea Bissau and the lack of historical information on seasonal prices and volumes it is very difficult to say at this stage whether the intra-seasonal price pattern for rice is (1) normal, (2) moving away from a normal historical pattern, or (3) moving towards a more normal cycle. In order to mitigate the potential negative impacts of these two extremes, allow normal seasonal prices to guide the market, and reduce the need for "knee-jerk" reaction by the government to "do something", means and ways need to be implemented to monitor seasonal price patterns for rice and other cereals to establish a basis from which sound long-term policies and strategies can be developed.

3. Effects of inter-seasonal price fluctuations

Inter-seasonal prices play a major role in the annual production plans of farmers. As average farm gate prices for paddy change from year to the next, farmers will take them into account when they decide how much rice to plant for the next season. Usually, last season's price and perhaps the price during the previous year play a larger role in the decision making process than prices from earlier years. In this sense, inter-seasonal price changes play an important role in the long-term allocation of resources in agricultural production.

The positive effects of this response to prices is clearly indicated by the annual increases in rice production since the mid 1980's. The negative effects are likely to show up when the market place, for some reason or another, does not live up to farmers' expectations. For example, farmers in Tombali and Quinara reacted to last year's rice prices by planting more paddy for this 1989/90 season (up to the point where there was not enough seed to plant all the area wanted). During field visits to Catió and the Island of Caiar in November of 1989, it was observed that the market was clearly not reacting as farmers had expected, based on last year's experience. Farmers were trying to sell 1kg of milled rice for GP 1,000 in the streets of Catió, yet nobody was buying. At the closest point to farm level, a trading point on the Island of Como, the same farmers were selling rice for GP 550/kg and the trader was stocking it due to lack of market for local rice. The question is twofold, first what brought about this drastic and perhaps uncharacteristic change in inter-seasonal price, and second how are farmers likely to react to such unaccustomed change, specially subsistence farmers?

Both questions are very difficult to answer with any degree of reliability due to the lack of historical information on production, consumption, marketing patterns, prices, and volumes traded. A reasonable proposition as to what is happening is as follows. The sudden conversion of the market economy to free trade brought about great uncertainty and uncharacteristic market behavior due to "lack of experience" by the private sector participants. Farmers, remembering the unheard of high prices of the 1987/88 crop, and the historical unprecedented prices experienced during the months of July and August were naturally expecting something similar or better to happen this season. As a result they planted as much rice as possible. However, late imports of rice after the difficult situation last July and August, saturated the national market at the moment when the largest rice crop in recent memory was ready for harvest. The stage for the conflict between farmers' expectations and market reality has thus been set.

Now, how will rice producers react to this unsettling inter-seasonal price shift? Will they go ahead and plant even more rice because average farm gate paddy and milled rice prices are nevertheless above historical levels, meaning they have to remember at least two seasons back. Or, will they reduce their rice planting because of their disappointment, and if so by how much? Such potential "seesawing" can be very counterproductive, difficult to plan for, and potentially destabilizing.

Understanding the potential impacts of these inter-seasonal price fluctuations on farmers' decisions, intermediaries, consumers' household budgets and expenditures, and overall social and economic stability will become increasingly more important as higher production levels are achieved within the nation.

SECTION V

CONCLUSIONS AND RECOMMENDATIONS

A. Introduction

This final section of the report is intended to provide the basis for discussing the conclusions and recommendations generated by the team's analysis of the rice sub-sector. A thorough discussion and understanding of their potential significance for the different participants within the rice sub-sector will (1) benefit public officials in their efforts to define a policy framework, analyze potential strategies, and plan and implement them, (2) help producers plan their annual rice production, (3) facilitate private sector decisions on market and financial investments within the rice postharvest system, and (4) guide consumers in their expenditure decisions.

Equally important, this section is intended to generate the necessary feedback to assist the authors in sharpening their understanding of the ongoing liberalization process and thus contribute to their efforts in formulating more precise action recommendations.

B. Conclusions and Action Recommendations

1. Definition and implementation of a cereal policy for Guinea Bissau

a. Conclusion

There is a need to establish and promulgate a definitive food cereal policy for the nation. Also, continued success of the liberalization process requires a new and appropriate institutional role for the public sector. Such development would (1) strengthen the liberalization steps taken so far, (2) create a framework for selecting appropriate strategies for policy implementation which would help optimize use of agricultural resources, (3) define the appropriate facilitating role and activities for the public sector, in support of a market oriented cereal production system, and (4) determine the needs for institutional strengthening.

b. Action recommendations

- Definitive cereal policy and strategies: Representatives from the public and private sector, as well as donor agencies should initiate analysis and discussions on alternative policy options and strategies for rice and other cereals in Guinea Bissau. Under the leadership of the most appropriate Ministry, a policy subcommittee with members from all 3 sectors should be established to generate the necessary background information needed for such discussions. A series of meetings, seminars, and workshops should be scheduled to generate a consensus on what constitutes a definitive rice and

cereal policy and associated implementation strategies for the nation.¹

- Follow-up technical assistance: If needed, technical assistance should be provided to (1) cooperate in the formulation of alternative policy options and strategies for discussion, (2) participate in the selection process of policy options and strategies, (3) undertake an inventorying of current public and private sector institutional capabilities and needs and (4) develop an institutional strengthening plan for public, quasi-public and private institutions.

2. Reduction of restrictions, exemptions, and subsidies on rice movements

a. Conclusion

Regulatory remnants of the pre-liberalization period continue to hamper the development of an efficient private sector marketing system for rice in the nation. These constraints are related to the movement of rice from the South, and their phased reduction or immediate elimination would improve overall efficiency of the market system by (1) increasing the responsiveness and competition of available transportation modes (water verses truck), (2) creating a sound economic environment for water transport, and (3) eliminating unfair or discriminatory exemptions. Furthermore, their removal is highly unlikely to result or contribute to rice shortages in the South.

b. Action recommendations

- Exemptions from rice tax: If the rice tax on paddy and milled rice volumes taken from the South cannot be eliminated, then all exemptions should cease immediately, thus eliminating a discriminatory practice which gives an unfair marketing advantage to selected institutions or individuals.

- Road checks: Unless needed for national security reasons, all road blocks should be reduced, or eliminated if the rice tax can be done away with.

- Coastal transport subsidies: Subsidies received by RODOFLUVIAL on coastal transport result in unfair freight disadvantages for the private sector, making it impossible to recover full cost of coastal transport. Elimination of these subsidies is recommended in order speed up the development of an efficient private sector coastal transport system.

- Bureaucracy related to coastal transport: The bureaucratic steps related to coastal transport are such that this mode of transport

¹Proposed policy options for discussion and consideration are contained in a complementary policy paper.

is highly discouraged, or shifted to the informal sector. Steps to eliminate many of the irrelevant, repeated, and unneeded permits, streamlining and centralizing the required paper work, and reducing the amount of signatures needed would greatly enhance the system's capacity to compete with road transport for cargo and services.

3. Reduction or elimination of trade taxes and commercial licenses

a. Conclusion

Present taxes and associated bureaucracy on volumes of paddy or milled rice evacuated from the South, represent a direct tax on rice farmers, an unproductive burden on the marketing system, and an unnecessary increase in the required marketing gross margin. Also, their contribution to reducing or stemming the flow of rice from the region is highly suspect. A gradual reduction, or outright elimination would add to the efficiency of the rice marketing system, increase farmers direct income, and help reduce needed gross marketing margins.

It is not at all clear that the current system for issuing commercial licenses, the fees being charged, and annual license fee collection is efficient and conducive for the development of a competitive private sector marketing system for agricultural commodities and general merchandise. The speed with which these unprecedented liberalization developments have taken place, the lack of communication between regions and Bissau, between ministries involved (MOC and MOF), and probably the lack of resources and infrastructure have rendered the current system incapable of managing the whole system in an effective and efficient manner, let alone capable of analyzing its impact and generating improvements from within.

b. Action recommendation

- Rice tax: Prior to reducing or eliminating the rice tax, a short but rigorous study of the rice tax system should be undertaken to assess the impact of losing that tax base and determine viable alternatives to generate needed tax revenues.

- Commercial licenses: The current system for issuing commercial licenses, and regulating and collecting annual fees should be reviewed carefully in order to (1) assess the revenue impact of issuing licenses for commercial activities, (2) explore options for streamlining the system, and (3) assess the impact of differential fees being charged for the different commercial categories in order to remove any arbitrary financial obstacle which would prevent interested parties from formal entry in commercial activities.

4. Stable and relevant legal environment for commerce and trade

a. Conclusion

A stable, responsive, and relevant legal environment for commerce and trade is essential for the development of a dynamic, effective, and efficient marketing

system for agricultural commodities in the country. As the economy and marketing system continue to change from state control to a private sector orientation, an analogous change in the legal framework needs to be initiated as well. However, no new legal framework for commerce and trade has been developed and implemented. Many of the pre-liberalization rules, regulations, and laws, which are no longer valid, relevant, or even legal, continue to be used to the detriment of private sector initiatives and general development of the country. The development and implementation of a modified and relevant set of legal codes for trade and commerce should be a priority in the country's general development plan.

b. Action recommendations

- Review commercial and trade laws and regulations: Efforts should be undertaken immediately to review current laws and regulations being applied to commerce and trade. The review process should carefully look into the country's history to assess the reasons and importance of laws developed to provide a basis for bridging history with future requirements for relevant trade laws and regulations.
- Development and adoption of universal commercial and trade laws: Based on the review, a new and relevant set of universal commercial laws and regulations should be proposed, discussed and finalized, before plans for their introduction and adoption are formulated and implemented.
- Institutional capacity: Once a relevant set of universal laws and regulations for commerce and trade have been finalized, and respective implementation strategies selected, an analysis of ways and means for implementation should be carried out. This will require an assessment of implementation capabilities within the public sector, including technical, managerial, legal, and other human resource and institutional requirements.
- Planning implementation: A long-term plan to institutionalize legal, technical, managerial, and supervisory capabilities within the nation should be developed, funded and initiated. Such institutional strengthening will require personnel training in different legal, para-legal, technical, analytical, managerial, and supervisory areas, materials and equipment, and as it is phased in, additional budgetary support within the public sector.
- Follow-up technical assistance: If needed, technical assistance should be provided to (1) cooperate in the review of commercial laws and regulations, (2) participate in the development and formulation of new universal laws and regulations for review and discussion, (3) undertake an inventorying of current public institutional capabilities and needs, and (4) develop an institutional strengthening plan for the nation.

5. Credit for capital inputs and marketing

a. Conclusion

The liberalization process has provided private sector entrepreneurs and institutions with numerous business opportunities directly and indirectly related to rice production and marketing, specially in the South. Where introduced, farmers have benefited from the additional value added or efficiency gains at village or farm level. However, the lack of credit and credit sources (see below, point No.6), as well as the cost of credit has prevented a faster introduction rate of labor and time saving technologies. In order to support the rate at which rice production seems to be growing, additional credit should be earmarked for the following marketing functions:

- Rice mills: The introduction of simple, low capacity rice mills has been met with great success in the South. Additional mills, and training of operators and managers would (1) increase milling capacity, system efficiency, and rice quality, and (2) free up additional "women days" for more productive use such as additional rice cultivation, marketing of other agricultural commodities, and (3) educational opportunities. The same would be true for surplus producing rice areas within deficit regions.

- Other postharvest technologies: The Chinese rice production project at Carantabá has demonstrated the feasibility of introducing simple, non-motorized labor saving postharvest technologies such as threshers and winnowers. Introduction of such technologies to other rice producing areas would again release many person-days for other productive uses.

- Rural transportation: Rural transportation represents the weakest link in the assembly and distribution process for agricultural commodities, agricultural inputs, and consumer goods. Additional credit from various sources is needed to increase its efficiency, and further release labor. Among those identified are (1) small trucks (5 tons or less), motorcycles, and bicycles for rural assembly and distribution, and (2) outboard motors to increase water transport and fishing capacity and efficiency.

- Commercial Credit: Marketing efficiency is increased if sufficient and timely credit is made available for commercialization of agricultural commodities and consumer goods. More specifically credit in the form of working capital is needed for goods in storage, transit, processing, and credit sales. Additional credit from different sources would help alleviate the credit shortage and increase marketing competitiveness and efficiency.

b. Action recommendations

- Additional credit: Within the scope of the structural restructuration program being undertaken, attention should be given to the amount and cost of credit being made available for marketing

purposes in general and for capital inputs associated with rice marketing. Additional amounts at market cost should, if possible be made available.

- Credit sources: Except for DEPA offering limited credit for the purchase of rice mills, all other marketing credit is tied to and controlled by merchants. Additional credit sources should be established to increase competition for clients wanting credit and decrease the negative effects of being credit source-bound.

6. Rural banking facilities

a. Conclusion

The lack of rural banking facilities throughout the nation represents one of the major road blocks to economic development in the country. First, the lack of such infrastructure and services is contributing to the retardation of the development process of changing the current subsistence oriented agricultural production system (except for export crops) to one oriented towards marketing. Second, merchandising in rural areas is being forced to retain bartering as the most common kind of commercial transaction process for agricultural commodities, a high cost marketing approach. Third, where rural wealth has accumulated (rice mills), its productive use is limited to the immediate area due to the lack of rural banking institutions which could absorb such savings and make it available for other productive use. Fourth, lack of additional credit sources compound the problem of credit availability and source-binding. Fifth, national fiscal and monetary policies and strategies are made more complicated and subject to doubt since amount of currency in circulation is literally unknown.

b. Action recommendations

- Establishment of banking facilities in rural areas: Establishing rural banking facilities should be encouraged in order to (1) assist the transformation process from subsistence to market orientation, (2) provide rural savers with a flexible means for storing and increasing their wealth, (3) make rural savings available to the general economy, (4) provide independent credit sources and services, and (5) facilitate national monetary and fiscal accounting and policies.

- Rural banking options: A study of possible alternatives to establish rural banking facilities should be undertaken in the near future. Options range from opening branches of the National Bank and the newly formed private bank in rural towns and communities, to forming chartered but independent savings and loans associations at village level. Appropriate legal and regulatory guidelines will have to be formulated, formalized, and implemented. Institutional capacities will have to be strengthened or developed.

7. Rice production and postharvest research

a. Conclusion

While progress has been made toward improvement in rice production through the research and extension activities at Contoubel and Caboxante, these initiatives have been limited in scope (number of research projects) and coverage (number of farmers benefited). Rice production has also been supported directly through several projects aimed at regaining productive areas, specially mangrove rice land in the South.

Some information, essential for food policy planning is, however not yet available or not readily accessible. This information includes (1) per unit (ton) production cost for each of the rice production system, (2) seeding rates per system, (3) field losses per system, (4) milling yields and qualities, and (5) postharvest losses per system. While an analysis of the per unit production cost for each system would include items (2) through (4), they have been listed separately to highlight their importance.

Accurate estimates or access to such information on a timely basis is essential for the development of reliable statistical estimates on annual rice production and net availability. This information is in turn key for analysis related to marketing, policy, consumption, imports, budgetary and foreign exchange needs.

b. Action recommendations

Base line information on cost of production, seeding rates, and milling yields and quality should be gathered over several crop cycles, starting with the next planting season in August. Personnel at both experiment stations at Contuboeil and Coboxouque are needed due to the distribution of the rice production systems and the milling sites. This information, once gathered should be forwarded to GAPLA for analysis and distribution. Immediate application of this information can be made in the statistical reporting service, as well as production, marketing and policy analysis.

Research on field and postharvest losses should be started as soon as Mr. Mustafa Cassama returns to his post at the Crop Protection Service in Bissau. Such a research program will require planning and additional funding and serious consideration should be given to both. Research results can lead to improved storage structures and management at the farm level and the marketing system, and improved handling methods in the field with consequential reduction in qualitative and quantitative losses.

C. Strengthening Institutional Capacities in Support of Policy and Market Development

a. Conclusion

Successful initial formulation, subsequent execution, and future monitoring and follow-up of a national cereals policy and respective implementation strategies will depend to a large extent on the quality of institutional capacities required to carry out the task. First, a very specific institutional capacity

will have to be strengthened or developed for initial policy implementation, subsequent monitoring, and future policy reformulation and adjustments. Second, a complementary institutional capacity will be required to provide the necessary facilitating production and marketing information needed in support of policy analysis and formulation, rice production and market development.

b. Action recommendation

Therefore, capacity institutionalization to (1) undertake continuous cereal policy analysis and formulation, and (2) collect, analyze, and disseminate supporting production and marketing information will require an assessment of current capabilities of institutions within the public, quasi public and private sector. A long-term plan to institutionalize the necessary technical, analytical, and managerial capabilities within the respective institutions can then be developed, funded and implemented. Such institutional strengthening will require, long-term technical assistance, short-term and academic training for nationals, and additional budgetary support from the public sector.

The following guidelines to achieve such capacity institutionalization in support of policy formulation and facilitating production and marketing analysis are recommended:

- Determine type and quantity of expertise needed
- Determine type and quantity of equipment and material required
- Assess current institutional capacities in the nation
- Determine best combination of public and/or quasi public institutions for institutionalizing policy analysis and formulation
- Determine best combination of public and/or quasi public institutions for institutionalizing facilitating production and marketing analysis
- Formulate technical assistance and training programs
- Prepare budget for technical assistance, training, equipment and materials, and other requirements to implement programs
- Initiate discussions with GOGB to prepare for institutionalization and assumption of recurrent costs once program gets underway
- Initiate development and application of relevant analytical tools and models to monitor market performance and predict market behavior, as soon as the program is approved

D. Supporting Studies and Surveys to Assist in Policy Options Formulation and Market Development Support

The objective of this effort to analyze the rice marketing system in Guinea Bissau was to bring about a better understanding of present and potential future impacts of the liberalization process on the system in order to assist development agencies and GOGB officials in their efforts to improve it. This original effort was then expanded to include an initial analysis of the rice production system as well, and an assessment of current national rice policies and strategies.

Conclusions and recommendations contained in this section summarize the needed follow-up actions which are deemed essential for strengthening and successfully expanding the initial successes of the liberalization program.

Successful execution of recommended action recommendations will require that some additional studies be undertaken. These include (1) studies to generate a sound base line type of information for policy analysis, formulation, implementation, and monitoring, (2) assessment of impact of liberalization process on rice farmers, and (3) development the needed analysis for successful planning and implementation of other recommendations related to marketing credit and rural banking facilities, universal commercial laws and regulations, additional labor saving technologies at farm level, and other agri-business development efforts.

1. Base line studies related to rice policy formulation and strategies

While initial policy formulation, strategy development and implementation should not be delayed, its quality, and therefore socio/economic impact (or chances of avoiding costly errors) will be greatly enhanced by carrying out the following studies and assimilating the results in the policy formulation process.

a. Regional trade study for rice

Regional trade between Guinea Bissau and neighboring countries such as Senegal, Guinea Conackry, and Gambia has existed since before colonial times. Today, traders transcend geopolitical borders with ease and timeless practicality.

This formal and informal trade also reacts to take advantage of the individual national cereal policies and strategies of these countries. The reciprocal reaction is reflected in the periodic shifts of trade patterns and volumes, and therefore on individual national production incentives and levels. On top of it, seasonal factors will also generate shifts in the trade patterns and volumes, regardless of a country's individual policy.

A thorough understanding of the existence, patterns, and volumes of this regional trade (formal and informal) is critical for sound formulation of a national rice policy and implementation strategies. Periodic updates on each country's policies and strategies on cereal production, pricing, consumption, intervention, and trade is also fundamental knowledge that needs to be incorporated in the process of national policy formulation.

b. Determination of production and marketing costs of rice by system

Some of the issues that will have to be addressed when discussing and formulating a national rice policy include (1) comparative advantage of cultivating rice, (2) price stabilization, and (3) food security.²

²See complementary policy paper

A clear understanding of the country's comparative advantage for growing rice and its implications for policy formulation, and therefore global resource allocation is fundamental. Comparative advantage deals with the issue of growing versus importing a given food commodity, such as rice in Guinea Bissau. Most likely, the issue in GB is one of relative rather than absolute comparative advantage. However, in order to analyze this, internal production and marketing costs for rice, which are not known at present are essential.

While at the aggregate or national level rice can be treated as a single commodity (based on a given quality), this assumption no longer holds true once the 4 different production systems are taken into account. On a system by system basis there are likely to be differences in production, first stage marketing, and opportunity costs for resource use. These differences are critical when the relative contribution of each system to national production of rice is assessed, and a national policy is formulated. For example, the production, marketing and opportunity costs of mechanized rice production will be very different from rice produced manually by farmers on Caiar. Thus, their relative comparative advantages may result in one system being favored over another, depending on how the country's cereal policy is formulated and strategies designed.

Thus, production, marketing and opportunity costs for resources for each rice production system need to be gathered, analyzed and incorporated into the cereal policy formulation process.

c. National household budget and consumption survey

Knowledge about rice utilization in the country is equally critical for formulating and implementing a sound national cereal policy that will generate the desired socio/economic impacts. However, similar to production costs, hardly anything is known about rice consumption, except that it is the main staple food of the nation. In order to provide policy planners with a better basis for policy formulation than the existing theoretical assumption of 110 kg per head per year, a national household budget and consumption study should be undertaken as soon as possible. Such study would provide base line type of information on a host of important issues such as:

- rural and urban household budget allocation to food, shelter, transportation, health, school, recreation, etc
- actual per capita rice consumption and total consumption
- differences in per capita consumption by rural-urban; ethnic; area of the country, income level; and seasonality

This information would provide the base-line information critical for development efforts which are beyond the development of a national cereal policy such as health and school programs. Also, understanding the shifts of household budget allocations as per capita income increases will enable policy planners to improve decisions that will impact on resource (household, agricultural, industrial) allocations as the nation develops. Finally, understanding the continuing impact of the liberalization process on consumers, specially the poor urban population is critical to design programs that mitigate the potential negative impacts on this segment of the population.

2. Monitor impact of market liberalization on rice farmers

a. Study on farmers' welfare changes after liberalization

Farmers' welfare has improved since the liberalization process began some years ago. Also, initiatives to change the existing subsistence system towards a market oriented production system will contribute to farmers' well-being and the rural sector in general.

At present, however only qualitative assessments are available such as "farmers have increased rice production", or "plenty of consumer goods are available in the rural sector, even in the most remote corners". While these statements are beneficial documentation of the positive impact of the liberalization effort, they do not provide us with any quantitative information which would permit policy planners to assess the degree, speed, and direction of impact.

A monitoring system to periodically assess the degree, speed, and direction of changes affecting farmers and the rural sector would be invaluable for future policy adjustments (we should remember that over 80% of the population is still rural). This would tell us how and to what degree farmers have benefited from the liberalization process. How are they likely to benefit and react to future policy changes? Are there any changes, on-going or potential which may dilute the benefits reaped so far?

Simple surveys to monitor farm inputs utilization, farm gate prices, in combination with other production and marketing information, would provide the necessary basic information to assess current impacts and indicate future developments.

b. Production and marketing study of other agricultural commodities

The liberalization process affected agricultural production in general and not only rice production. The same holds true for agricultural commodity marketing. The major problem this rice study was faced with was the dearth of reliable information about rice production, marketing, and utilization. There was no lack of opinions, conjectures, and contradictions. Nevertheless, unprecedented policy changes took place and are likely to take place in the future.

While the policy changes that have taken place, had to take place due to lack of options, and were probably the hardest once to make, future ones are more likely to be "on the margin", that is building on what already has changed. This type of policy adjustments carry with them the potential for greater benefits, if well designed, or greater harm if erroneously conceived.

Additional production and marketing studies by commodity lines for major agricultural commodities grown for export and national consumption would (1) generate the necessary basic information needed for sound agricultural policy adjustments, (2) indicate where production and marketing of these commodities can be improved, (3) assist in agri-business development, and (3) lead to improved resource allocation within the sector, and thus farmers' welfare.

3. Additional market development initiatives

a. Capital inputs, marketing credit and rural banking system study

As indicated in this Section additional credit for capital inputs, marketing in general and rural banking facilities are needed to reduce the shortage of credit, tap the potential of rural wealth generated, provide additional sources of credit to reduce the "source-binding", and facilitate national fiscal and monetary decisions and controls.

A credit and banking study should be undertaken to address these shortcomings in the credit and banking system. More needs to be known about actual and potential credit needs, how rural wealth is being generated and its potential size, how the "source-binding" for credit is affecting production and marketing of agricultural commodities. Alternative means of providing credit for production, capital improvements, marketing, and mobilization of rural wealth would be a tremendous boost to the rural economy of the country.

b. Universal commercial laws and regulation

While the marketing system was completely changed from state monopoly to private, and commercial laws and regulations associated with the old system were abolished by decree, no comprehensive set of universal laws and regulations have been proposed and implemented for the new privatized marketing system. Also, while abolished by decree, it does not imply that old laws and regulations are no longer being applied and enforced, to the detriment of private sector initiatives.

A study to review old commercial laws and regulations, their abolition by decree, and the lack of a new set would provide the basis for understanding and clarifying their current and potential negative impact on the liberalization process. It would also provide the necessary information to formulate changes and promote implementation of an appropriate new set of universal laws and regulations which would encourage a more efficient and effective development of the marketing system.

c. Labor saving agricultural technology

One of the most dramatic impacts of the introduction of small rice mills in rural areas of Tombali and Quinara has been the indirect impact on rural enterprises and thus wealth through the release of labor which was previously needed to pound rice on daily basis. The Chinese rice production project has, if anything demonstrated the technical, cultural, and economic feasibility of introducing simple rice threshers which increased labor efficiency of that operation considerably.

Introduction and adoption of additional labor saving technologies would further increase the release of labor to be used in more productive enterprises, and at the same time increase the efficiency of the rice post-production system. Also, the more the rice production system changes to a market oriented one, the more and more efficiency, quality, and responsiveness will be rewarded.

Simple, non-motorized winnowers could also be locally manufactured and introduced. Labor saving technologies are also available for the production phase, and should be explored as well. For example, IRRI has developed many small production tools, implements, and machinery which might very well be suitable for some of the rice production system in Guinea Bissau.

Finally, another lasting and beneficial impact of introducing and adopting labor saving technologies is reflected in the creation of rural enterprises geared to manufacture and repair these tools and machinery, compounding the gains of the initial introduction.

d. Agri-business development studies

As the rural sector responds to challenges provided by the demand for agricultural commodities, and the need for agricultural inputs and consumer goods at village level, the opportunities for appropriately sized, located, and designed agri-businesses will abound.

Over the long-run, means and ways should be institutionalized to provide the necessary support to determine the marketing, technical, economic, financial, and managerial feasibility of potential projects and new enterprises.

For example, if threshers and winnowers are successfully introduced, new manufacturing and repair shops will undoubtedly follow. Where agri-business type of studies, technical assistance, and training can help is in addressing the needed technical, managerial, financial, and marketing needs and requirements that such enterprises will have to master in order to successfully undertake such enterprises. The same holds true for the existing rice mills and future ones, transportation enterprises, village level savings and loans associations, merchandising enterprises, fishing enterprises, and others.

ANNEX. I
STATEMENT OF WORK

18

STATEMENT OF WORK

The contractor shall provide a study including but not limited to the following:

1. Description of characteristics and analysis of recent trends in rice production, import/export, and consumption. Degree of self-sufficiency achieved.
2. Structural analysis of the marketing system for rice in the country, to include: identification and description of seasonality, marketing channels, participants, volumes, storage, handling, and processing infrastructure; estimates of post-harvest losses, transportation methods, bottlenecks with the system, managerial and technical skills, etc.
3. Contingent upon availability and quality of data, carry out a conduct and performance analysis of the rice marketing system to include prices and margins at different levels, farmer's share of wholesale and retail prices, price discovery, determination, and qualities, barriers to entry, etc.
4. Analysis of recent and current GOGB policies, intervention strategies and programs and their impact on rice production, marketing, and consumption.
5. Work jointly with a representative of INEP and conduct field surveys to obtain a personal view of the rice system, interview with producers marketing agents, GOGB officials, other donor agencies, and consumers.

ANNEX II

SURVEY OF RICE CONSUMPTION IN BISSAU CITY

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BAIRROS :	23	PESSOAS=10:	248	RECEBEM :	40 DESP/DIA:	5775
FOSSES :	99	TRABALHAM :	250	FESS/FGG:	7 CONS/DIA:	292,85
Nro. PESSOAS :	693	LAVRAM :	67	TRAB/FGG	2,5 CONS/FE3:	0,51

CDVA	BAIRRO	N.PESSOAS	ETNIA	PESSOAS=10	TRABALHAM	P. LAVRAM	RECEBEM	CONSUMO	CONS/PESS	DESPESAS
1	NEMA	13	BALANTA	6	2	1	0	3	0,90	7000
1	NEMA	9	MANDINGA	4	2	0	0	3,5	0,50	5000
1	RENO	10	CASOBERD	6	4	1	1	3	0,43	4000
1	CUPILON DE CIMA	6	BIAFADA	2	3	1	1	1,75	0,35	5000
1	CUPILON DE BAIXO	3	BALANTA	1	2	1	0	1,75	0,70	3000
1	MISSIRA	4	BALANTA	2	2	1	1	2	0,67	5000
1	MISSIRA	7	MANCANHE	4	1	0	0	2	0,40	1500
1	MISSIRA	7	MANCANHE	3	2	1	0	1,5	0,27	3000
1	MISSIRA	4	MANJACA	0	2	1	0	2,5	0,63	5000
1	MISSIRA	10	MANCANHE	6	2	1	1	5	0,71	7000
1	MISSIRA	4	MANCANHE	2	2	1	0	1	0,33	6000
1	GAMBIAFADA	12	BIAFADA	4	2	1	1	4,5	0,45	10000
1	GAMBIAFADA	9	BIAFADA	4	3	1	0	4	0,57	9000
1	MINDARA	13	MANCANHE	5	2	0	0	14	1,33	7000
1	MINDARA	8	MANCANHE	3	3	1	1	2,5	0,38	3000
1	MINDARA	6	PAPEL	3	1	1	0	3	0,87	5000
1	SINTRA	8	MANJACA	2	5	0	0	4	0,57	6000
1	CHAO DE PAPEL	8	PAPEL	5	1	1	1	2,5	0,45	8000
1	CHAO DE PAPEL	6	BALANTA	1	2	1	1	1	0,18	10000
1	AJUDA	10	MANDINGA	4	4	1	1	2,5	0,31	15000
1	AJUDA	6	SARACULE	2	2	0	0	4	0,90	8000
1	CUNTUM	10	MANDINGA	2	5	1	0	6,5	0,72	6000
1	CUNTUM	6	FULA	4	3	1	1	2,5	0,63	4500
1	STA LUCIA	2	PAPEL	0	1	1	0	0,6	0,30	1500
1	STA LUCIA	8	PAPEL	1	1	0	0	5,5	0,73	7500
1	LUANDA	7	BALANTA	2	4	1	0	3	0,50	3000
1	LUANDA	4	MANJACA	2	2	1	0	2,5	0,83	1500
1	LUANDA	4	BALANTA	1	1	0	0	3	0,86	3500
1	TOHADA	5	FULA	3	2	1	0	3	0,86	4000
1	TOHADA	6	FULA	4	2	1	1	2	0,50	5000
1	PLUSA	7	MANCANHE	2	3	0	0	3,5	0,58	5000
1	BANDIM	9	FULA	5	2	1	1	3	0,46	6000
1	ALTO CRYM	6	MANCANHE	3	1	0	0	0,75	0,17	1000
0	FRACA	7	MANJACO	2	2	1	1	2	0,33	5000
0	FRACA	5	PAPEL	1	2	0	0	1,5	0,33	7500
0	FRACA	6	CASOBERD	1	3	1	1	1,75	0,23	10000
0	FRACA	3	CASOBERD	2	4	0	0	2,5	0,36	10000
0	FRACA	3	CASSANGA	3	4	1	1	2,75	0,42	15000
0	FRACA	11	PAPEL	3	5	1	1	4	0,42	12500
0	FRACA	7	MANCANHE	2	2	0	0	2	0,33	5000
0	FRACA	5	BIJAGO	1	2	1	1	1,5	0,33	7500
0	FRACA	4	BALANTA	1	1	1	0	1	0,29	5000
0	FRACA	12	BEAFADA	2	7	1	1	4,5	0,41	10000
0	FRACA	7	CASOBERD	3	2	0	0	1,5	0,27	5000
0	FRACA	7	SIRIANA	2	4	1	1	3,5	0,58	7500
0	FRACA	6	PAPEL	3	1	1	1	2,5	0,56	5000
0	FRACA	6	CASOBERD	2	3	0	0	2	0,40	10000
0	FRACA	8	MANDINGA	2	3	1	0	3,5	0,50	8000

FRACA	7 PAPEL	3	1	1	0	5	0,91	5000
FRACA	6 CABOVERD	3	3	0	0	3	0,67	7500
FRACA	5 GESA	2	1	0	0	2	0,50	5000
FRACA	7 CABOVERD	2	2	0	0	3	0,50	7500
FRACA	7 MISTA	0	3	0	0	2,5	0,36	15000
FRACA	7 PAPEL	3	2	1	1	3,5	0,64	6000
FRACA	4 CABOVERD	2	2	0	0	1,5	0,50	7500
FRACA	5 MANJACA	3	2	1	0	1,5	0,43	5000
FRACA	6 CABOVERD	3	1	0	0	2	0,44	6000
FRACA	5 MANCANHE	2	2	1	0	2	0,50	5000
FRACA	8 FULA	3	2	1	0	4	0,62	7500
FRACA	7 LIBANESA	1	6	0	0	3	0,46	15000
FRACA	5 CABOVERD	2	2	0	0	2	0,50	10000
FRACA	8 MISTA	3	4	1	0	3,5	0,54	10000
FRACA	7 NALU	2	3	1	1	4	0,67	10000
FRACA	6 LIBANESA	1	3	0	0	4	0,73	15000
PENHA	6 MANCANHE	3	2	0	0	1,5	0,33	1500
PENHA	12 MANDINGA	2	4	1	1	5	0,45	5000
PENHA	9 FELUPE	4	3	1	1	2,5	0,36	4500
PENHA	5 BEAFADA	3	2	1	0	1	0,29	2000
PENHA	9 PAPEL	2	2	0	0	3	1,13	5000
PENHA	16 MANDINGA	5	6	1	1	9	0,57	6000
PENHA	5 MANCANHE	2	1	1	0	1	0,25	2000
PENHA-BOR	4 GESA	1	2	0	0	1,5	0,43	2500
PENHA-BOR	11 MANSONCA	2	4	1	1	4	0,40	3500
PENHA-BOR	5 BEAFADA	0	3	1	1	4	0,80	3500
PENHA-BOR	6 SOSSO	1	3	1	0	1,5	0,27	2500
PENHA-BOR	6 BEAFADA	2	2	1	0	1,5	0,30	1200
PENHA-BOR	4 BEAFADA	2	2	1	1	1,5	0,50	2500
BAIRRO MILITAR	5 BALANTA	2	2	1	1	2,5	0,63	7500
BAIRRO MILITAR	7 BEAFADA	3	2	1	1	2	0,36	1500
ERA	12 MISTA	5	1	0	0	5	0,53	6000
MADINA	5 MANJACA	3	2	1	0	1,5	0,43	2500
MADINA	6 BALANTA	2	2	1	1	1,5	0,30	6000
QUELELE	5 BALANTA	2	2	1	1	1,5	0,38	3000
QUELELE	4 BIJAGO	3	1	1	1	1	0,40	7500
QUELELE	6 BIJAGO	1	2	1	1	1,5	0,27	5000
QUELELE	8 PAPEL	5	2	1	1	1,5	0,27	
QUELELE	6 BALANTA	3	1	1	1	4,5	1,00	1500
QUELELE	4 BALANTA	1	3	1	0	2	0,57	1500
QUELELE	5 PAPEL	1	2	0	0	1,5	0,33	1000
QUELELE	7 MANDINGA	2	3	0	0	2	0,33	1500
QUELELE	6 NALU	2	3	1	1	2	0,40	1500
CUNTUM	13 BEAFADA	2	7	1	1	8	0,67	10000
CUNTUM	6 MANDINGA	4	2	1	0	1,5	0,38	3500
CUNTUM	8 CABOVERD	5	2	0	0	2,5	0,45	5000
CUNTUM	15 FULA	0	7	1	0	6	0,40	10000
CUNTUM	4 MANCANHE	3	1	0	0	1	0,40	5000
CUNTUM	8 MANCANHE	4	2	1	1	4,5	0,75	3500
CUNTUM	5 BALANTA	2	3	1	1	2,5	0,63	3000
CUNTUM	4 FULA	1	2	0	0	1	0,29	3000

CONSUMO DE ARROZ POR BAIRRO

ZONA	BAIRRO	ETNIA	N. PESS	N. PESSK	TRABALH	P. LAVRAM	RECEBEM.	CONSUMO	CONS/PE	DESPESAS	BAIRRO	MEDIA
I	AJUDA	MANDINGA	10	4	4	1	1	2,5	0,31	15000	I AJUDA	0,56
I	AJUDA	SARACHE	6	1	2	0	0	4	0,66	8000	I A CRIM	0,17
I	ALTO CRIM	MANCANHE	6	3	1	0	0	0,75	0,17	1000	P B MILIT	0,49
P	BAIRRO MILITAR	BEAFADA	7	3	2	1	1	2	0,36	1500	I SANDIM	0,46
P	BAIRRO MILITAR	BALANTA	5	2	2	1	1	2,5	0,63	7500	P BRA	0,53
I	BANDIM	FULA	9	5	2	1	1	3	0,46	6000	I CHAO	0,32
P	EPA	MISTA	12	5	1	0	0	5	0,53	6000	P I CUNTUM	0,53
I	CHAO DE PAPEL	PAPEL	8	6	1	1	1	2,5	0,45	8000	I CUPILON	0,53
I	CHAO DE PAPEL	BALANTA	6	1	2	1	1	1	0,18	10000	I GAMBIAF	0,51
I	CUNTUM	FULA	6	4	3	1	1	2,5	0,63	4500	I LUANDA	0,73
P	CUNTUM	BALANTA	5	2	3	1	1	2,5	0,63	3000	P MADINA	0,36
P	CUNTUM	MANDINGA	6	4	2	1	0	1,5	0,38	3500	I MINDARA	0,79
P	CUNTUM	BEAFADA	13	2	7	1	1	8	0,67	10000	I MISSIRA	0,50
P	CUNTUM	MANCANHE	8	4	2	1	1	4,5	0,75	3500	I NEMA	0,65
P	CUNTUM	CABOVERD	8	6	2	0	0	2,5	0,45	5000	P PENHA	0,50
P	CUNTUM	FULA	4	1	2	0	0	1	0,29	3000	P PENHA BDR	0,45
P	CUNTUM	MANDINGA	10	2	5	1	0	6,5	0,72	6000	I PLUBA	0,58
P	CUNTUM	MANCANHE	4	3	1	0	0	1	0,40	5000	C PRACA	0,48
P	CUNTUM	FULA	15	0	7	1	0	6	0,40	10000	P QUELELE	0,44
P	CUPILON DE BAIXO	BALANTA	3	1	2	1	0	1,75	0,70	3000	I RENO	0,43
P	CUPILON DE CIMA	BIAFADA	6	2	3	1	1	1,75	0,35	5000	I SINTRA	0,57
P	GAMBIAFADA	BIAFADA	9	4	3	1	0	4	0,57	9000	I S. LUCIA	0,52
P	GAMBIAFADA	BIAFADA	12	4	2	1	1	4,5	0,45	10000	I TCHADA	0,68
P	LUANDA	BALANTA	4	1	1	0	0	3	0,86	3500		
P	LUANDA	MANJACA	4	2	2	1	0	2,5	0,83	1500		
P	LUANDA	BALANTA	7	2	4	1	0	3	0,50	3000		
P	MADINA	BALANTA	6	2	2	1	1	1,5	0,30	6000		
P	MADINA	MANJACA	5	3	2	1	0	1,5	0,43	2500		
P	MINDARA	MANCANHE	8	3	3	1	1	2,5	0,36	3000		
P	MINDARA	MANCANHE	13	5	2	0	0	14	1,33	7000		
P	MINDARA	PAPEL	6	3	1	1	0	3	0,67	5000		
P	MISSIRA	MANCANHE	4	2	2	1	0	1	0,33	6000		
P	MISSIRA	MANCANHE	7	4	1	0	0	2	0,40	1500		
P	MISSIRA	MANCANHE	10	6	2	1	1	5	0,71	7000		
P	MISSIRA	MANCANHE	7	3	2	1	0	1,5	0,27	3000		
P	MISSIRA	MANJACA	4	0	2	1	0	2,5	0,63	5000		
P	MISSIRA	BALANTA	4	2	2	1	1	2	0,67	5000		
P	NEMA	MANDINGA	9	4	2	0	0	3,5	0,50	5000		
P	PENHA	BALANTA	13	6	2	1	0	8	0,80	7000		
P	PENHA	MANCANHE	6	2	1	1	0	1	0,25	2000		
P	PENHA	MANDINGA	16	5	5	1	1	9	0,67	6000		
P	PENHA	BEAFADA	5	3	2	1	0	1	0,29	2000		
P	PENHA	PAPEL	9	2	2	0	0	3	1,13	5000		
P	PENHA	FELUPE	9	4	3	1	1	2,5	0,36	4500		
P	PENHA	MANDINGA	12	2	4	1	1	5	0,45	5000		
P	PENHA	MANCANHE	6	3	2	0	0	1,5	0,33	1500		
P	PENHA-BDR	BEAFADA	4	2	2	1	1	1,5	0,50	2500		

FENHA-BOR	MANGONCA	11	2	4	1	1	4	0,40	3500
FENHA-BOR	BEAFADA	5	0	3	1	1	4	0,60	3500
FENHA-BOR	SOSSE	6	1	3	1	0	1,5	0,27	2500
FENHA-BOR	BEAFADA	6	2	2	1	0	1,5	0,30	1200
FENHA-BOR	GEBA	4	1	2	0	0	1,5	0,43	2500
FLUBA	MANCANHE	7	2	3	0	0	3,5	0,52	5000
FRACA	CABOVERD	6	3	3	0	0	3	0,67	7500
FRACA	BIJAGO	5	1	2	1	1	1,5	0,33	7500
FRACA	MANCANHE	7	2	2	0	0	2	0,33	5000
FRACA	MANJACA	5	3	2	1	0	1,5	0,43	5000
FRACA	PAPEL	11	3	5	1	1	4	0,42	12500
FRACA	MANCANHE	5	2	2	1	0	2	0,50	5000
FRACA	CASSANGA	8	3	4	1	1	2,75	0,42	15000
FRACA	LIBANESA	7	1	6	0	0	3	0,46	15000
FRACA	CABOVERD	8	2	4	0	0	2,5	0,36	10000
FRACA	MISTA	8	3	4	1	0	3,5	0,54	10000
FRACA	CABOVERD	8	1	3	1	1	1,75	0,23	10000
FRACA	LIBANESA	6	1	3	0	0	4	0,73	15000
FRACA	BALANTA	4	1	1	1	0	1	0,29	5000
FRACA	PAPEL	5	1	2	0	0	1,5	0,33	7500
FRACA	CABOVERD	4	2	2	0	0	1,5	0,50	7500
FRACA	GEBA	5	2	1	0	0	2	0,50	5000
FRACA	CABOVERD	6	3	1	0	0	2	0,44	6000
FRACA	MANDINGA	8	2	3	1	0	3,5	0,50	8000
FRACA	FULA	8	3	2	1	0	4	0,52	7500
FRACA	PAPEL	6	3	1	1	1	2,5	0,55	5000
FRACA	CABOVERD	5	2	2	0	0	2	0,50	10000
FRACA	CABOVERD	7	3	2	0	0	1,5	0,27	5000
FRACA	NALU	7	2	3	1	1	4	0,67	10000
FRACA	CABOVERD	7	2	2	0	0	3	0,50	7500
FRACA	PAPEL	7	3	2	1	1	3,5	0,64	5000
FRACA	CABOVERD	6	2	3	0	0	2	0,40	10000
FRACA	MISTA	7	0	3	0	0	2,5	0,36	15000
FRACA	BEAFADA	12	2	7	1	1	4,5	0,41	10000
FRACA	SIRIANA	7	2	4	1	1	3,5	0,59	7500
FRACA	PAPEL	7	3	1	1	0	5	0,91	5000
FRACA	MANJACO	7	2	2	1	1	2	0,33	5000
QUELELE	BALANTA	5	2	2	1	1	1,5	0,38	3000
QUELELE	BIJAGO	4	3	1	1	1	1	0,40	7500
QUELELE	PAPEL	8	5	2	1	1	1,5	0,27	0
QUELELE	BALANTA	6	3	1	1	1	4,5	1,00	1500
QUELELE	BALANTA	4	1	3	1	0	2	0,57	1500
QUELELE	PAPEL	5	1	2	0	0	1,5	0,33	1000
QUELELE	MANDINGA	7	2	3	0	0	2	0,33	1500
QUELELE	BIJAGO	6	1	2	1	1	1,5	0,27	5000
QUELELE	NALU	6	2	3	1	1	2	0,40	1500
REMO	CABOVERD	10	6	4	1	1	3	0,43	4000
SINTRA	MANJACA	8	2	5	0	0	4	0,57	6000
STA. LUCIA	PAPEL	8	1	1	0	0	5,5	0,73	7500
STA. LUCIA	PAPEL	2	0	1	1	0	0,6	0,30	1500
TCHADA	FULA	6	4	2	1	1	2	0,50	5000
TCHADA	FULA	5	3	2	1	0	3	0,86	4000

CONSUMO DE ARROZ EM BISSAU POR ETNIA

BALANTA :	0,59	CABOVERD:	0,43	FULA :	0,53	MANCANHE:	0,48	MISTA :	0,47	SARACULE:	0,75
BEAFADA :	0,52	CASSANGA:	0,42	GEBÁ :	0,31	MANDINGA:	0,48	NALU :	0,53	SIRIANA :	0,63
BIJAGO :	0,34	FELUPE :	0,42	LIBANESA:	0,59	MANJACA :	0,50	PAPEL :	0,56	SOSSO :	0,29
						MANSONCA:	0,36				

ZONA	BATIDO	ETNIA	N. PESS	N. PESSK	TRABALH	P. LAVRAM	RECEBEM	CONSUMO	CONS/PE	DESPESAS	CONSUMO MEDIO	CODIGO
P	MADINA	BALANTA	6	2	2	1	1	1,5	0,30	6000	BALANTA :	0,58 BL
P	QUELELE	BALANTA	6	3	1	1	1	4,5	1,00	1500	BEAFADA :	0,52 BA
I	NEHA	BALANTA	13	6	2	1	0	8	0,80	7000	BIJAGO :	0,34 BJ
I	LUANDA	BALANTA	7	2	4	1	0	3	0,50	3000	CABOVERD:	0,43 CB
I	CHAO DE PAPEL	BALANTA	6	1	2	1	1	1	0,18	10000	CASSANGA:	0,42 CS
I	CURILON DE BAIXO	BALANTA	3	1	2	1	0	1,75	0,70	3000	FELUPE :	0,42 FE
P	QUELELE	BALANTA	5	2	2	1	1	1,5	0,38	3000	FULA :	0,53 FU
P	QUELELE	BALANTA	4	1	3	1	0	2	0,57	1500	GEBÁ :	0,31 GB
P	BARRIO MILITAR	BALANTA	5	2	2	1	1	2,5	0,63	7500	LIBANESA:	0,59 LB
C	PRACA	BALANTA	4	1	1	1	0	1	0,29	5000	MANCANHE:	0,48 MC
I	LUANDA	BALANTA	4	1	1	0	0	3	0,85	3500	MANDINGA:	0,48 MD
I	MISSIPA	BALANTA	4	2	2	1	1	2	0,67	5000	MANJACA :	0,50 MJ
P	QUINTA	BALANTA	5	2	3	1	1	2,5	0,53	3000	MANSONCA:	0,36 MS
P	BARRIO MILITAR	BEAFADA	7	3	2	1	1	2	0,36	1500	MISTA :	0,42 MI
P	RENHA	BEAFADA	5	3	2	1	0	1	0,29	2000	NALU :	0,53 NL
P	RENHA-BOR	BEAFADA	5	0	3	1	1	4	0,80	3500	PAPEL :	0,56 PP
P	QUINTA	BEAFADA	13	2	7	1	1	8	0,67	10000	SARACULE:	0,75 SA
P	RENHA-BOR	BEAFADA	6	2	2	1	0	1,5	0,30	1200	SIRIANA :	0,63 SI
P	RENHA-BOR	BEAFADA	4	2	2	1	1	1,5	0,50	2500	SOSSO :	0,29 SO
C	PRACA	BEAFADA	12	2	7	1	1	4,5	0,41	10000		
I	SABEAFADA	BEAFADA	9	4	3	1	0	4	0,57	9000		
I	SABEAFADA	BEAFADA	12	4	2	1	1	4,5	0,45	10000		
I	CURILON DE CIMA	BEAFADA	6	2	3	1	1	1,75	0,35	5000		
P	QUELELE	BIJAGO	6	1	2	1	1	1,5	0,27	5000		
C	PRACA	BIJAGO	5	1	2	1	1	1,5	0,33	7500		
P	QUELELE	BIJAGO	4	3	1	1	1	1	0,40	7500		
C	PRACA	CABOVERD	6	3	3	0	0	3	0,67	7500		
C	PRACA	CABOVERD	7	2	2	0	0	3	0,50	7500		
P	QUINTA	CABOVERD	8	5	2	0	0	2,5	0,45	5000		
C	PRACA	CABOVERD	4	2	2	0	0	1,5	0,50	7500		
I	RENH	CABOVERD	10	6	4	1	1	3	0,43	4000		
C	PRACA	CABOVERD	7	3	2	0	0	1,5	0,27	5000		
C	PRACA	CABOVERD	3	1	3	1	1	1,75	0,23	10000		
C	PRACA	CABOVERD	6	2	3	0	0	2	0,40	10000		
C	PRACA	CABOVERD	5	2	2	0	0	2	0,50	10000		
C	PRACA	CABOVERD	6	3	1	0	0	2	0,44	6000		
C	PRACA	CABOVERD	8	2	4	0	0	2,5	0,36	10000		
C	PRACA	CASSANGA	9	3	4	1	1	2,75	0,42	15000		
P	RENHA	FELUPE	9	4	3	1	1	2,5	0,36	4500		
I	QUINTA	FULA	6	4	3	1	1	2,5	0,63	4500		
P	QUINTA	FULA	4	1	2	0	0	1	0,25	3000		
I	TOPADA	FULA	6	4	2	1	1	2	0,50	5000		
C	PRACA	FULA	8	3	2	1	0	4	0,62	7500		
I	BANDIM	FULA	9	5	2	1	1	3	0,45	5000		
P	QUINTA	FULA	15	0	7	1	0	6	0,40	10000		
I	TOPADA	FULA	5	3	2	1	0	3	0,85	4000		
P	RENHA-BOR	GEBÁ	4	1	2	0	0	1,5	0,43	2500		

O	FRACA	GESA	5	2	1	0	0	2	0,50	5000
O	FRACA	LIBANESA	5	1	3	0	0	4	0,73	15000
O	FRACA	LIBANESA	7	1	5	0	0	3	0,45	15000
O	FRACA	MANCANHE	5	2	2	1	0	2	0,50	5000
I	MINDARA	MANCANHE	13	5	2	0	0	14	1,33	7000
P	CUNTUM	MANCANHE	4	3	1	0	0	1	0,40	5000
F	CUNTUM	MANCANHE	9	4	2	1	1	4,5	0,75	3500
I	MISSIRA	MANCANHE	7	4	1	0	0	2	0,40	1500
I	MINDARA	MANCANHE	8	3	3	1	1	2,5	0,38	3000
I	MISSIRA	MANCANHE	10	6	2	1	1	5	0,71	7000
I	PLUSA	MANCANHE	7	2	3	0	0	3,5	0,58	5000
P	FENHA	MANCANHE	5	3	2	0	0	1,5	0,33	1500
P	FENHA	MANCANHE	5	2	1	1	0	1	0,25	2000
I	MISSIRA	MANCANHE	7	3	2	1	0	1,5	0,27	3000
I	ALTO CRIM	MANCANHE	5	3	1	0	0	0,75	0,17	1000
I	MISSIRA	MANCANHE	4	2	2	1	0	1	0,33	5000
I	FRACA	MANCANHE	7	2	2	0	0	2	0,33	5000
I	CUNTUM	MANDINGA	10	2	5	1	0	5,5	0,72	6000
F	CUNTUM	MANDINGA	6	4	2	1	0	1,5	0,38	3500
F	FENHA	MANDINGA	16	5	6	1	1	9	0,67	6000
I	VENHA	MANDINGA	9	4	2	0	0	3,5	0,50	5000
O	FRACA	MANDINGA	8	2	3	1	0	3,5	0,50	8000
I	AJUDA	MANDINGA	10	4	4	1	1	2,5	0,31	15000
F	FENHA	MANDINGA	12	2	4	1	1	5	0,45	5000
F	QUELELE	MANDINGA	7	2	3	0	0	2	0,33	1500
I	MISSIRA	MANJACA	4	0	2	1	0	2,5	0,63	5000
I	SINTRA	MANJACA	3	2	5	0	0	4	0,57	6000
F	MADINA	MANJACA	5	3	2	1	0	1,5	0,43	2500
O	FRACA	MANJACA	5	3	2	1	0	1,5	0,43	5000
I	LUANDA	MANJACA	4	2	2	1	0	2,5	0,83	1500
O	FRACA	MANJACO	7	2	2	1	1	2	0,33	5000
F	PENHA-BOR	MANSONCA	11	2	4	1	1	4	0,40	3500
F	BRA	MISTA	12	5	1	0	0	5	0,53	5000
O	FRACA	MISTA	7	0	3	0	0	2,5	0,36	15000
O	FRACA	MISTA	8	3	4	1	0	3,5	0,54	10000
O	FRACA	NALU	7	2	3	1	1	4	0,67	10000
P	QUELELE	NALU	6	2	3	1	1	2	0,40	1500
I	STA LUCIA	PAPEL	2	0	1	1	0	0,6	0,30	1500
O	FRACA	PAPEL	5	1	2	0	0	1,5	0,33	7500
I	CHAO DE PAPEL	PAPEL	9	5	1	1	1	2,5	0,45	8000
O	FRACA	PAPEL	6	3	1	1	1	2,5	0,56	5000
O	FRACA	PAPEL	11	3	5	1	1	4	0,42	12500
F	QUELELE	PAPEL	5	1	2	0	0	1,5	0,33	1000
F	FENHA	PAPEL	9	2	2	0	0	9	1,13	5000
I	MINDARA	PAPEL	5	3	1	1	0	3	0,67	5000
F	QUELELE	PAPEL	6	5	2	1	1	1,5	0,27	0
I	STA LUCIA	PAPEL	8	1	1	0	0	5,5	0,73	7500
O	FRACA	PAPEL	7	3	1	1	0	5	0,91	5000
O	FRACA	PAPEL	7	3	2	1	1	3,5	0,64	5000
I	AJUDA	SARACULE	6	2	2	0	0	4	0,80	8000
I	FRACA	SIRIANA	7	2	4	1	1	3,5	0,53	7500
F	PENHA-BOR	SOSSO	6	1	3	1	0	1,5	0,27	2500
F	CUNTUM	SOSSO	4	1	2	0	0	1	0,29	3000

ANNEX III
ANALYTICAL FRAMEWORK FOR MARKET ANALYSIS

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A. Private Incentive and Efficiency in Resource Use

As market-oriented economists, our theory is that competitive markets tend to allocate the use of resources within an economy such that public welfare is maximized. In a market economy, public welfare is largely defined by the people through their purchases in the market place. The people in a market economy buy what they desire. This process of "voting with their pesos" directs the use of resources. For example, suppose that the people in a market economy change their purchase habits relating to a commodity such as rice. Instead of the widely available type of rice, suppose a substantial proportion of the people begin buying a new type. In a highly competitive market, the increased demand for the new type of rice will tend to drive up the price of the newer type. Simultaneously, the decreased demand for the older rice type will tend to reduce its selling price.

Market agents, such as food retailers and rice producers, will tend to respond to the changed prices by producing and selling more of the newer rice type and less of the older type. In this manner, the market economy redirects or reallocates available resources away from the production of lesser desired goods and services and toward the production of more highly desired goods and services. This reallocation process will tend to continue until all resources are being used in their highest valued use. This will occur when all resources are producing goods and services that are valued by society at least as much as society values the resources themselves.

These values are discovered in the market place. We generally use the term, price, to describe the value society places on goods and services. We generally use the terms, wage, rent, or cost, to describe the value society places on resources. Thus, the allocation of resources within an economy is considered optimal or efficient if each resource is being paid a wage that is just equal to the price paid for the good or service produced by the resource. Alternatively, this means that each good or service is sold at a price is just equal to the cost of its production. This implies that no excess profits are being made and no losses are being incurred.

In Guinea-Bissau, efficiency would imply that imported rice should sell at a price that will just pay for its importation and distribution. Obviously, this will mean that the people providing the service will feel adequately rewarded for their efforts; otherwise, they would work elsewhere. If the price became much higher than this adequate level, the excess profits would attract the interest of other market agents. These agents would import more rice, perhaps more than was really necessary, and the increased quantities of rice on the market would tend to drive the retail price down. This adjustment process would continue forever. However, the large variations in price would tend to cease as market agents learned to provide the amounts of rice which could be absorbed by the market at a price that would just pay for the efforts of efficient market agents.

Efficiency also implies that national rice should compete with the imported rice; otherwise, producers would be encouraged to use their resources inefficiently. If rice production were subsidized, that is, paid a higher price than the market price; producers would put more of their resources into the production of rice. This would discourage them from putting those resources into the production of commodities the market would have indicated were more desired. The nation would have to pay more for its rice than necessary and it would give up the products which would have been produced had the market directed the allocation of resources. Under a market-directed system, some additional rice production may be encouraged as the people express their preference for local rice. Alternatively, the production of other commodities, such as fruits and vegetables may be encouraged. Some of those products may be consumed locally, providing variety to the local diet and downward pressure on the prices of the goods produced. Some of those products may be exported, providing the nation with additional foreign exchange.

Excess profits attract attention. They are a signal that more needs to be done in a given market area. In an open market, entrepreneurs quickly respond to these signals and resources are directed to the delivery of the services. This is efficient because the high profits attract attention to a problem or an opportunity that society feels needs immediate attention. However, as soon as the problem begins receiving attention, the excess profits begin to disappear. The market agents working on the problem learn how to solve it efficiently and only those who can solve the problem efficiently remain in the business. Meanwhile the entrepreneurs of the nation are being attracted to the next most profitable problem facing the nation. Over a period of time, the basic problems of life tend to be solved in the most efficient manner possible.

In the agricultural sector of Guinea-Bissau, this process has begun with the export of cashew nuts. High profits has attracted the attention of entrepreneurs willing to take substantial risks to assemble and export this product. Their success will mean that the excess profits associated with this business will tend to decline as the process becomes well known and systematized. The entrepreneurs in the business will gradually be replaced by more cautious and efficient business people. Meanwhile, the entrepreneurs will be searching for new businesses with high enough profits to attract their attention. In Guinea-Bissau, this may be palm oil or some entirely new commodity. The point is that the nation's resources tend to be used in their most efficient use. Entrepreneurs are encouraged to take a leadership role in this process by the promise of larger than normal profits if they act quickly.

It is important to note that the reallocation process requires that prices are free to fluctuate in response to the changed purchasing patterns of the people and that resources are free to be used as directed by prices. A shorthand way of expressing this requirement is to say that the economic environment must allow for flexible prices and mobile resources.

The reallocation process would encourage adjustments in resource use until all resources are employed in their highest valued use. When this condition has been reached, there is no incentive to change the allocation of resources and the economy is said to be in equilibrium. No excess profits are being made. No losses are being incurred. By definition societal welfare is maximized because

the people are getting the maximum value (as they define value through their purchases) from the use of available resources.

However, economic equilibrium is hardly ever reached because conditions in the economic environment are seldom stable. For example, the preferences, tastes and desires of the people may change. When this occurs and people change their purchase patterns, prices change. The changed prices reduce the profitability associated with some goods and services and increase the profitability associated with others. The changes in prices and associated profitability provide the incentive for businesses to change the mix of goods and services they produce and the economy is moved toward re-establishing equilibrium. The new equilibrium will reflect the people's redefined sense of welfare.

The most important policy conclusion one obtains from our theory is that resource use is best directed by market forces. No other method of directing the use of resources within an economy is more responsive to the demands of the people as expressed through their purchasing power. This is because a highly competitive market constantly provides the incentive to adjust the use of resources to serve the desires of society. The fact that the incentive for optimal use of resources is constant insures that societal welfare is always as close to its maximum level as possible. Under a market-directed system of resource allocation, changing the utilization of resources to reflect changes in preferences or other economic factors does not require that any committee meet to decide if a change is appropriate. The change begins automatically as soon as the people begin to express a desire for a change through their changed purchasing patterns. No surveys of the people's desires need to be made. The people's changed purchasing patterns provides the most accurate and timely survey of what the people want. If market agents are free to respond to these desires, societal welfare will tend to be maximized.

B. The Role of Government in Managing the Economy

Perhaps, the most informative analogy of an economy is that of a living organism which is constantly evolving or adapting to the environment in which it lives. The economic environment in which an economy operates or "lives" is defined by the available resources, the external economy, and government. The most relevant example of an economy adapting to changes in its economic environment caused by government action is the economy of Guinea-Bissau adapting to the change from a centrally-directed economy to a market-directed economy.

Governments have a large responsibility for setting an economic environment that facilitates the efficient use of societal resources in supplying the demands of the people. Our market-oriented theory of resource allocation implies that this can best be done by minimizing the direct intervention of government in the free play of market forces. Often governments are unsatisfied with the level and distribution of goods and services produced by open market forces and decide to intervene in the market place to direct the use of resources in a manner they feel is more socially acceptable. Generally, these actions have some effect on prices or resource movement. The danger in taking actions which restrict the free movement of prices and resources is that the reallocative ability of the market is hampered. This hampers the economy's ability to adapt to changed

conditions and increases the chances that resources will be used inefficiently. This increases the chances that societal welfare will be correspondingly reduced.

Given that government intervention in the market place should be minimized, the question arises as to what is the role of government. Our market-oriented theory implies that some services are not readily supplied by the private sector since the private sector would have difficulty in collecting payment for the use of such services. A relevant example of this type of service is the collection and dissemination of market information. The market functions best when all market agents are well informed about prices and other economic factors in the economic environment. Yet, very few private businesses are devoted to collecting and publishing such information for two reasons. First, once the information is collected and published few people are willing to pay for it. Secondly, private businesses often profit from the fact that they have information other market agents do not have. Thus, there is very little incentive for the private sector to collect and distribute information. An obvious role for government is to provide this important service.

Other facilitatory services normally provided by government are laws and the legal system to enforce them, money to be used as medium of exchange, and a transportation network. These services are generally termed, facilitatory services, because they facilitate or "make easier" the transaction of private business.

Another role of government is to maintain enough control over the economy to foresee and prevent disasters. The analogy between an economy and a living organism must be extended to include the possibility that there are limits to the organism's ability to adapt. Most fish have no capability to adapt to the drainage of water from the pond in which they live. This can apply to an economy also: too great a shock or change in the economic environment and an economy can be seriously damaged. This implies that governments have a responsibility to develop and maintain the capability to foresee and prepare for abnormal shocks to their economies.

As market economists, the authors often speak of the need for the government to control or regulate its economy. However, as we have attempted to demonstrate with the fore-going discussion of our analytical point of view, the words, control and regulation, have very restricted definitions for us. By control, we mean the type of global control that is oriented toward predicting and dealing with shocks to the economy that are beyond the economy's adaptive capability. This type of control helps insure that the economy is not irreparably damaged by unforeseen events yet leaves the day-to-day task of allocating resources to market forces. When we speak of regulation, we are thinking of regulations that assure the free flow of resources (including information) throughout the economy. Such regulations assure a high level of competition within the economy.

C. Assuring Food Security in a Market-Directed Economy

The implications of market-oriented theory for the role of government in assuring food security are that government should only do what private industry will not do. Under this operating philosophy, the major task of government is to provide information on food production, consumption, importations, and exportations that

will allow the widest possible understanding of the food situation. Secondly, the government should set in place an economic environment that encourages private industry to act on the information, that is, to supply the appropriate quantities of food at reasonable prices. Adequate information and the freedom to act on that information should assure that a society can solve its normal food needs and adapt successfully to most shocks to the system. However, government must be prepared to act under extraordinary circumstances when all private industry efforts fail.

D. Understanding a Market Via the Structure, Conduct, and Performance Model

Market economists have developed a model which they use as a framework for studying markets. The model is called the structure, conduct, and performance model. The theory behind the model is that the structure of a market influences how the market agents conduct their business and that both structure and conduct influence the performance of the market. The structure of a market is a description of the numbers of firms operating at each easily identifiable stage or functional level in the market.

The basic functions of a marketing channel are assembly, processing, wholesaling, retailing, storage, transportation and grading for quality. Storage and transportation are the connecting functions which link the other major functions. Thus, storage and transportation can occur at, or between, any of the other major functions. Grading for product quality is an important facilitatory function that can occur at any stage of the market channel. Additional functions that are important in well-developed market channels are further processing (converting the basic product into a specialized consumer product such as bread) and packaging.

A stage in the market channel can be described as a level or strata in the marketing channel where a particular marketing function or group of functions is performed by a group of similar firms or organizations. (To economize on word usage, an individual, a marketing firm or an organization is often called a market agent.) The stages of a marketing channel represent different combinations of these basic functions. The particular combination of functions performed at each market stage is an individual characteristic of the market being studied and depends on the commodity being handled and the structure of the market channel. Generally, the first stage in a marketing channel is the assembly stage. This is the case in the marketing channel for rice in Guinea-Bissau. At the assembly stage, small quantities of rice from a number of farmers are assembled into lots or quantities large enough to be transported economically.

Marketing economists speak of higher and lower market stages or levels because they picture the market channel diagrammed as is done in Figure III-1. The flow of the product is described as moving up the market channel from the producers at the lowest level to the consumers at the highest level.

Conduct refers to the way the market agents conduct their business. The most important aspects of their conduct is how they set prices and coordinate their activities. Structure has an obvious effect on the method in which prices are set. If there is only one firm at any particular stage in the marketing channel,

that firm may have the power to set the price unilaterally. This was the case in Guinea-Bissau prior to 1986 when only the government parastatal, Armazens do Povo, had the right to purchase cashew nuts. If there are a very few, highly cooperative market agents at any particular stage in the marketing channel, there is a possibility that the small number of agents will set the prices by agreement among themselves. The larger the number of agents at any particular stage the more unlikely such collusion will take place and the more likely prices will be set in negotiations between buyers and sellers. This arrangement comes closest to the competitive ideal because it encourages the competition between buyers and sellers which tends to insure that all resources in the economy are used in their highest valued use.

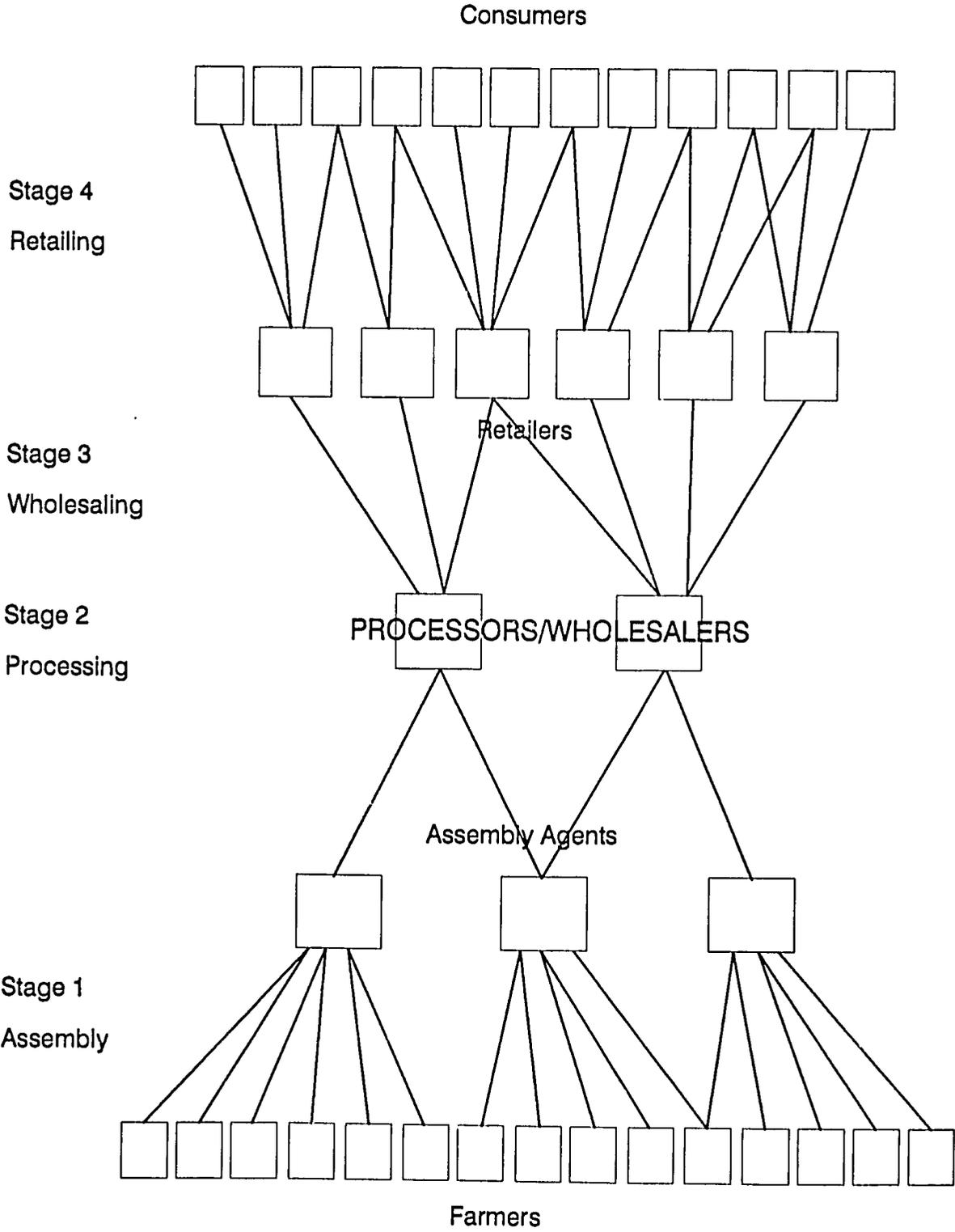
Conduct also refers to how skillful the market agents are in conducting their business. Basic business and technical skills are required to operate grain marketing businesses efficiently. The general level of training among the marketing agents in a marketing channel will affect the overall performance of the channel.

Coordination refers to the way the different market agents coordinate the flow of commodities through the channel. Coordination can be either vertical or horizontal. Vertical coordination insures that the proper quantities and qualities of each commodity arrive at the proper stage of the market channel at the proper time. Vertical coordination is most critical when dealing with highly perishable commodities such as fruits and vegetables. The quantities produced must match the processing and marketing capabilities of the higher stages in the channel to avoid unnecessary waste. Horizontal coordination is usually done to gain the economic power necessary to negotiate on equal terms with a powerful market agent at another level in the market channel.

Structure, again, has a major affect on the degree of coordination. If there is only one firm in the market, vertical coordination is handled internally by administrative decree. If there are many small, producing firms and only one processing firm, there is a tendency for the processing firm to dictate the terms of the agreement to the smaller firms. If the terms dictated by the processing firm become too onerous, the smaller firms may band together or horizontally coordinate to form a single negotiating unit with sufficient bargaining power to negotiate on equal terms with the processing firm. When market agents at a common level in the market channel combine to form a single firm, the process is termed called horizontal integration.

When dealing with a storable commodity such as rice, the need for precise coordination is reduced. Rice entering the rice milling process can be stored at various levels in the chain for some time before being accumulated into the proper quantities for efficient mill operations. However, this consideration must be balanced against the increased need for coordination when there are competing buyers for the unprocessed rice. Given an amount of production that is less than the operating capacities of existing milling operations, coordination is important for the market agent wishing to control sufficient quantities to operate efficiently its existing facilities.

FIGURE III-1
AN EXAMPLE MARKETING CHANNEL



Coordination can be achieved in several ways. The most common form of coordination in a market-directed economy is the coordination supplied by price signals alone. Market agents respond to changes in prices to increase or decrease the quantities and qualities of goods and services they provide to the market agent just above them in the market channel. As the need for closer coordination becomes greater, contractual agreements may be used to insure that desired quantities and qualities of goods and services are delivered as needed. Often the need for coordination becomes great enough that one market agent may expand its level of operations downward or upward in the market channel. The market agent taking this route to better coordination either purchases or duplicate the operations of its suppliers or its buyers. This type of coordination is called vertical integration. In a totally integrated market channel, one firm owns and operates market agents at every stage in the market channel.

Performance refers to how efficiently the market channel performs the marketing functions. Performance is influenced by the structure of the market channel and by the manner in which the market agents conduct their business. If prices are set through a highly competitive process of negotiation between buyers and sellers, efficiency of resource use tends to be assured. Efficiency implies that each good or service is sold at a price is just equal to the cost of its production. The economic efficiency or performance of the market channel could be impaired if some market agent or group of agents gained enough economic power to dictate rather than negotiate prices. This could be the case if the structure of the market channel or the conduct of the market agents within the channel allowed.

How efficiently each market agent performs the functions under its control also effects the performance of the market channel. Basic business skills are required for operating the business aspects of marketing organizations, while technical skills are required for maximizing technical performance.

In general terms, adequate market performance implies that the market channel supplies appropriate quantities, forms and qualities of the commodity at appropriate times and places at appropriate prices. Measuring and evaluating performance within a given economic environment is a matter of documenting the cost of performing the marketing functions and comparing those costs with the prices being paid for the services. Knowledge of the structure and conduct of the market is then used to understand any significantly large profits or losses. Knowledge of the structure and conduct of the market is also used to understand any significant differences in performance between markets. For example, a government may be concerned that the performance of one of its markets does not match that of a similar market in another economy. Finally, knowledge of the influence of structure and conduct on performance is used to set policies that encourage desired performance.

E. The Site-Price Model of Market Areas

Another model that is used by economists in understanding and explaining the action of a market is called the site-price model. This simple model is quite helpful in gaining a quick understanding of market areas and the direction of product movements. A market area is the geographical area around a market from

which customers are drawn. For example, a rice buyer establishing a market for rice in a village can only expect to buy rice from rice producers within a limited area in and around the village. Such a market area is defined by the price being offered by the rice buyer and the cost of transporting the rice to the market. The higher the price offered the larger will be the area over which the rice can be transported. It is helpful to think of price as an attractive force which pulls customers or products from a market area and toward a market. The higher the price the more powerful the attractive power.

To determine whether a particular producer/product is inside the market area of a particular market, one subtracts the total cost of delivering the product to the market from the price being offered for the product in the market. The total cost of producing and delivering the commodity to the market is termed the transfer cost to indicate that it is the total cost of transferring the commodity from the producer to the buyer. Transfer cost would also include packaging, loading and unloading costs. If the difference between buying price at the market and transfer cost is positive, there is an economic incentive for the producer to sell the product at the identified market. The producer will be considered to be in the market area of the market that offers the largest difference or profit between transfer cost and buying price.

The boundary of a market area is the line of locations from which shipment to the market would result in no profit: a difference between buying price and transfer cost of zero. Shipments to the market from anywhere outside that boundary would result in economic losses: negative differences between buying price and transfer costs. When market areas overlap, the boundary between the two can be defined as the line of locations from which shipment to either market is equally profitable.

The site-price model may be more easily understood and used in discussion in its graphical form. Assume that the horizontal line through Points E and F in Figure III-2 is a highway running across a level plain. Assume that our farm is located at Point A. The vertical distance above the highway represents transfer expenses, selling price, and profit. Assume that the cost of producing our product and loading it on to a suitable form of transportation is represented by the vertical distance from Point A to Point B. Given our costs, it is quite reasonable to assume that we would be willing to sell our product at our farm for any price represented by points above Point B. However, if we had to transport the product to the market we could only sell in markets in which the buying price was greater than our total transfer cost. Remember that transfer cost includes our cost of transportation.

Our cost of transportation can be expected to increase as a linear function of the transportation distance. Thus, our transportation cost can be represented as a straight line angling slightly upward from our location at Point A. If we add this transportation cost to our transfer cost at our farm, represented by Point B, the transportation cost line will begin at Point B and continue through Point E as shown in Figure III-2. This line, from B through E, can be termed our transfer cost function. The transfer cost from our farm at Point A to a market located at Point C is represented as the vertical distance between Point C and Point D.

To determine how far we would be willing to transport our product, we need to compare our transfer cost with the price being offered. Assume that the horizontal line at Point E represents a buying price. The difference between our transfer cost and the buying price is the vertical distance between our transfer cost function and the line representing the buying price. The difference between our transfer cost and the buying price is positive at any point along the highway between our farm and Point G. Given this information, it can be predicted that we would be willing to transport our product to a market as far away from our farm as the distance represented by Point G.

This very simple model can be used to illustrate several important considerations for policy makers. For example, what would be the effect on market area of a change in transportation cost? Transportation costs are strongly affected by the quality of the roadways which is under the control of government. Up to a point, the better the roadway, the lower the cost of transporting goods over it. In our graph, transportation cost per kilometer is reflected in the angle of the transfer cost function. When cost per kilometer is very high, the transfer cost function is steeply angled as shown by the line in Figure III-3 from Point B through Point C. Road improvements lower the cost of transportation and expand the distance over which it is reasonable to transport commodities.

For example, assume that road improvements reduce the cost of transportation from that represented by the line in Figure III-3 from Point B through Point C to the transportation cost represented by the line from Point B through Point D. This change in transport cost expands the distance the commodity can be transported from Point E to Point F. This expansion in market area can have the effect of bringing subsistence farmers into the market economy.

Figure III-4 illustrates the effect of an increase or decrease in the price being offered in a market. If the market price is raised from Point C to Point D, the market area is expanded by the distance between Points E and F. Figure III-5 illustrates the effect of delays caused by the lack of bridges or by bureaucratic procedures such as road check-points. The market area is reduced by the distance between Point C and Point D.

So far in our discussion, we have only admitted the possibility of transporting our commodity in one direction. Clearly, it is possible to transport in the other direction if we assume we are located on a highway. This possibility is graphed in Figure III-6.

Also up to this point in our discussion, we have looked at our graphs from one direction. A radical change in the way we look at the graphs will increase their ability to communicate the notions they represent. Note that our graphs convey the same information whether they are viewed upright as in Figure III-6 or viewed upside-down as would be the case if you rotated Figure III-6 180 degrees. With the graph inverted the market area is seen to be the area within a triangular shape that could easily be visualized as an umbrella or tent.

The height of the umbrella is equal to the price of the commodity minus the cost of producing it and loading it on to an appropriate form of transport.

FIGURE III-2
SITE - PRICE MODEL

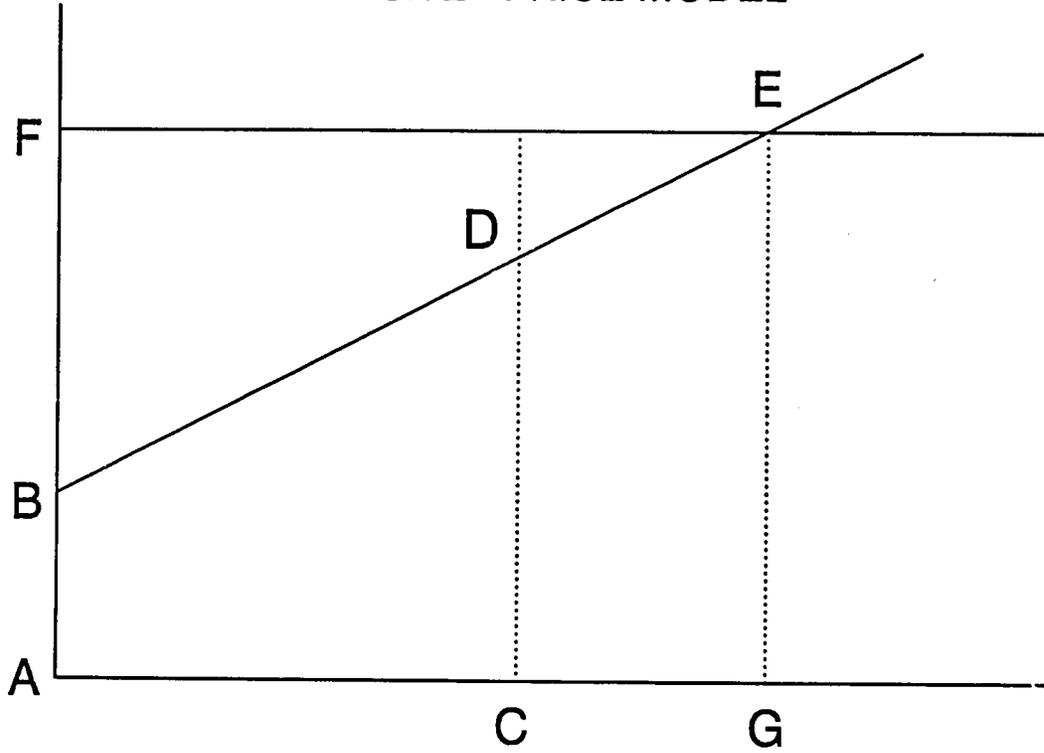


FIGURE III-3
SITE - PRICE MODEL

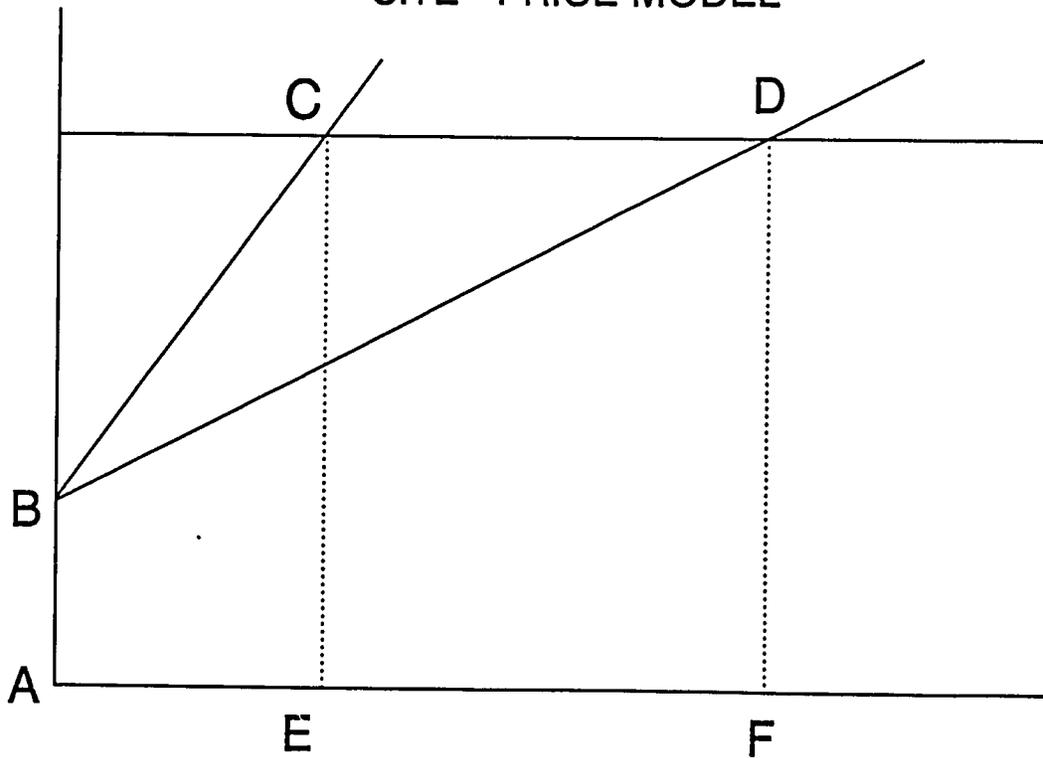


FIGURE III-4
SITE - PRICE MODEL

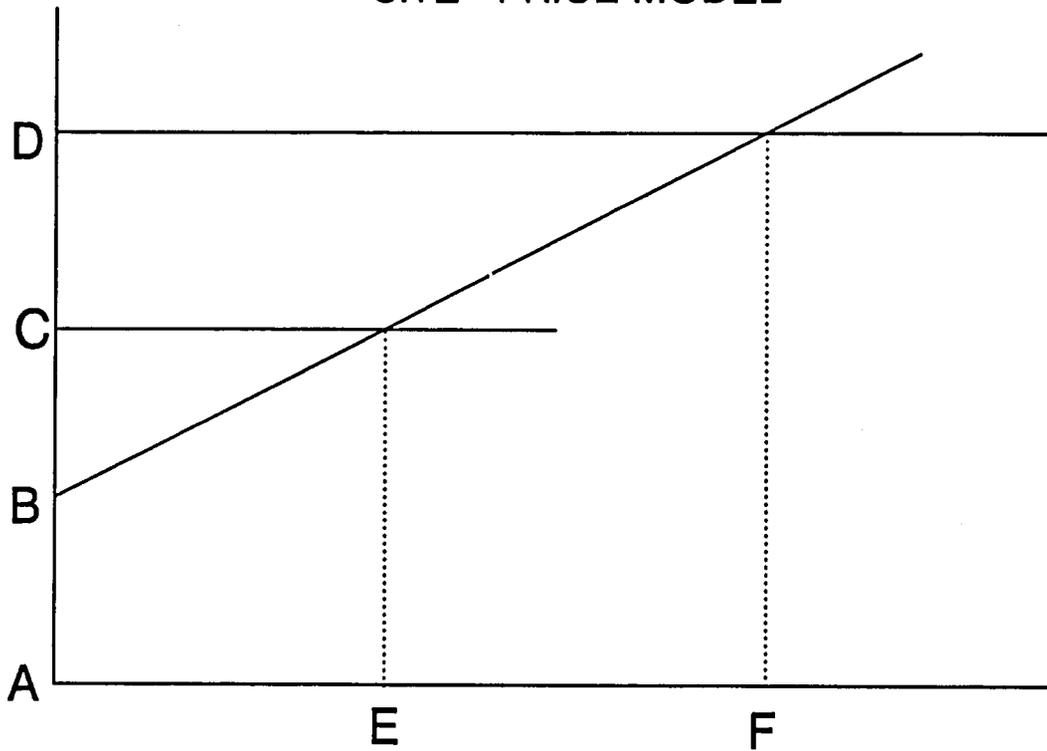


FIGURE III-5
SITE - PRICE MODEL

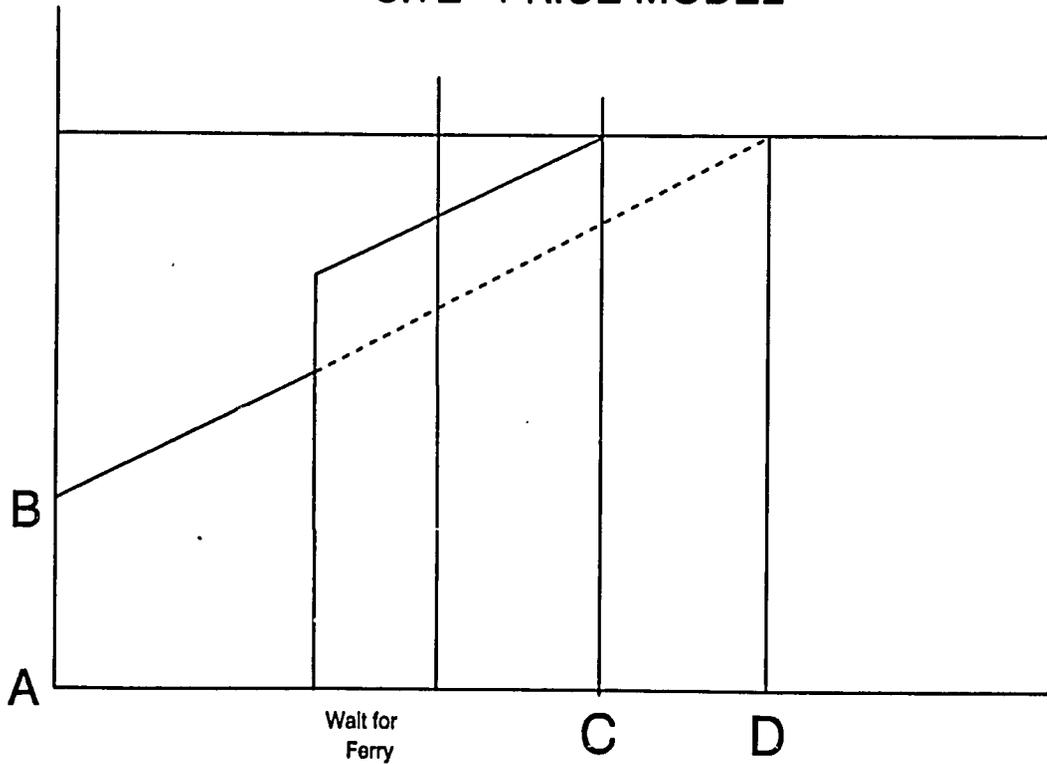


FIGURE III-6
SITE - PRICE MODEL

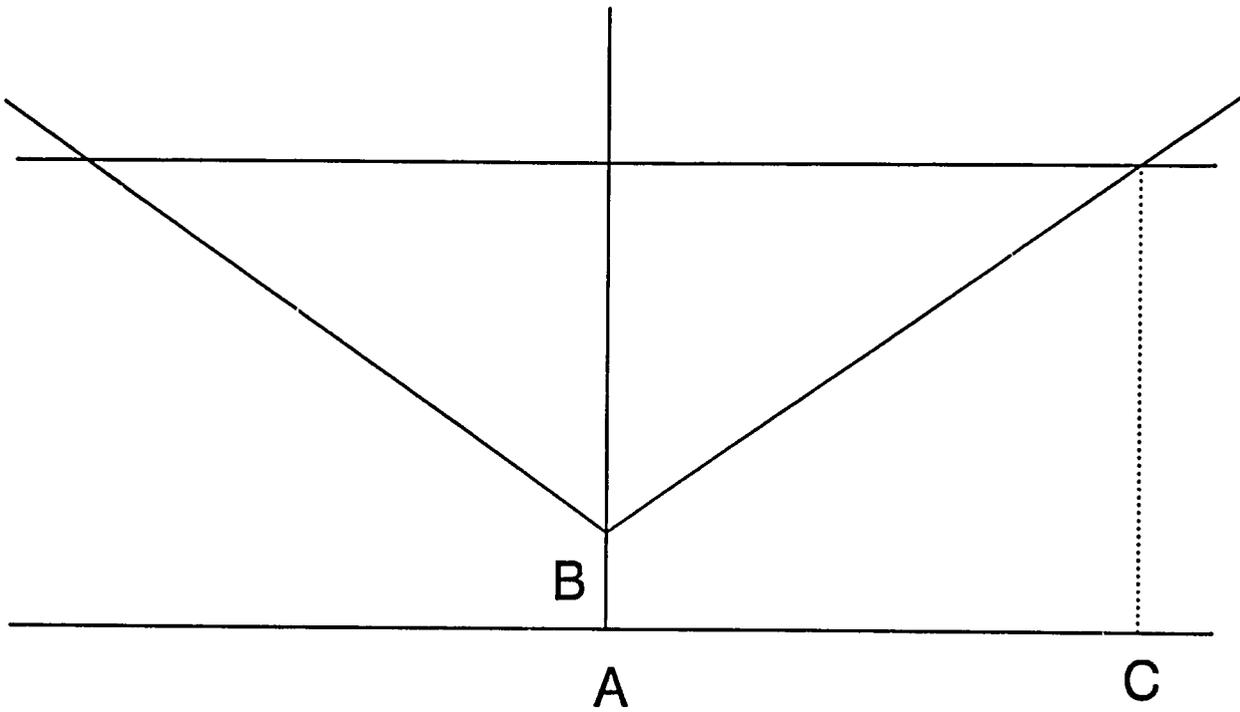


FIGURE III-7
SITE - PRICE MODEL

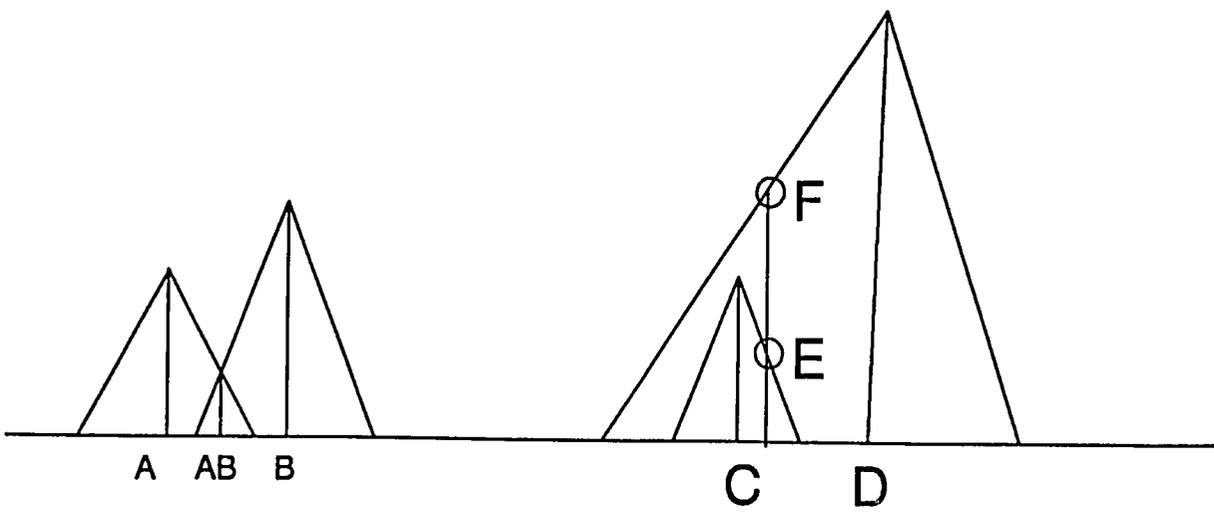
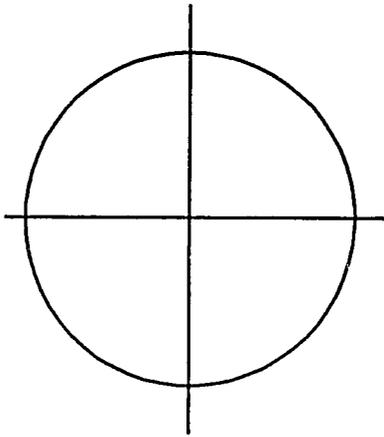
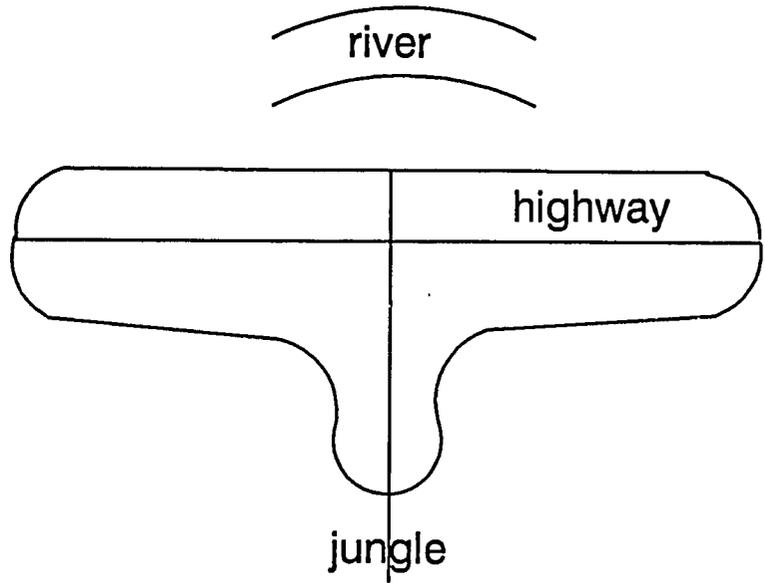


FIGURE III-8
SITE - PRICE MODEL



Market A



Market B

This height is also equal to the profit a producer operating at Point A could expect to obtain if the product was sold at Point A. The profit is reduced by the cost of transport as the distance between production point and market is increased. For example, profit would be zero if the producer had to transport the product a distance represented by the graphical distance between Point A and Point C.

The meaning of our graphs can be expanded from a focus on one producer to a focus on a market. Instead of assuming that the producer is located at Point A, let us now assume that the market is located at Point A. Under this assumption, we can predict that any producer located under the umbrella formed by our inverted pyramid will have an incentive to sell its goods at the market located at Point A. This allows us to describe the market area for market A as the area under the site-price umbrella erected over the market.

The concept of an umbrella is useful because it helps us visualize the market area surrounding a market as a true area rather than as only the distance between two points along a highway. To visualize this representation, it is helpful to assume we are looking at a map of our market areas as it lies on a table. Next visualize that we have erected little umbrellas or conical-shaped tents over each of our markets. The height of the tents represent the profit associated with each point under the tent. The areas under the tents represent the associated market areas. As the tents are raised or lowered by the action of price increases or decreases, the market areas under the tents expand or contract.

As the tents are raised higher and higher, the edges of the tents, representing the market boundaries, eventually meet the approaching boundaries of neighboring markets. Boundaries between two markets are established where the heights of the encroaching tents are equal. If the height of the tent of a powerful market is everywhere higher than a weaker market, the weaker market will be engulfed by the stronger market and the market area of the weaker market will be captured by the stronger market. These two possibilities are represented in two dimensional form in Figure III-7. In the left-hand portion of the figure, Markets A and B share the boundary AB. In the right-hand portion of the figure, Market D has captured all of the market area of Market C.

This is obvious because any producer located in the Market C area can make higher profits by selling to Market D rather than to Market C. Remember that the height under the tent represents the profits associated with selling to the associated market. That is, the vertical distance from any point under the price tent over Market C to the "roof" formed by the price-tent over market D is greater than the vertical distance from any point under the price-tent over Market C to the "roof" formed by the price-tent over Market C. This is illustrated in Figure III-7. The distance from the base line to Point F is greater than the distance from the base line to Point E. As this is true for all points under the price tent over Market C, all points in Market C are "captured" by Market D. Thus, all products under the price-tent over Market C will be sold in Market D.

One other modification of our site-price model needs to be made to allow it to more closely represent reality. So far, we have spoken of the umbrellas or tents as if they were symmetrical as true tents or umbrellas. This would accurately model reality if transportation cost were equal in all directions around the

market center. This might occur if the market were located on a flat plain with equal quality roads in all directions. When viewed from a point directly above the market, such a market area could be represented as a circle as is done in the left-hand portion of Figure III-8. However, such a condition rarely occurs in reality.

The more typical situation is for transportation costs to be unequal in most directions. This implies that the edges of the imaginary tents or umbrellas we erect over a market must be distorted to allow the boundary line touching the map to reflect the different costs of transportation. Recall that the edge of the tent touching the map represents the series of locations from which shipment to the market results in no profit. If a market were located on a highway between an impassible river and an impenetrable jungle, the tent would be distorted to reach a long way down the highway in both directions; but would not cross the river or enter the jungle. This market area is represented, in plan form, in the right-hand portion of Figure III-3.

We will use this simple model to gain an understanding of rice movements in Guinea-Bissau. For example, why rice grown in the Catió area seldom moves into the market at Bissau or why rice may be exported to Senegal. It is also helpful in explaining the benefits of improved transportation networks and in predicting the movement of rice in response to changes in costs and prices

ANNEX IV
LIST OF MERCHANDISE

LIST OF MERCHANDISE

The following list of merchandise was found to different degrees at merchants's stores close to farm level:

- Rice
- Flour
- Sugar
- Rum
- Salt
- Cooking oil
- Canned goods
- Tobacco
- National beer
- Soft drinks
- Clothes, and materials
- Plastic containers of all colors, sizes, and shapes
- Metal containers
- Soap
- Matches
- Aspirin
- Radios
- Flashlights
- Batteries for radios and flashlights
- Flashlight bulbs
- Machetes
- Shovels
- Knives

ANNEX V

LOCATION OF RICE MILLS SOLD BY DEPA IN THE SOUTH

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LOCATION OF RICE MILLS SOLD BY DEPA IN THE SOUTH

1983	Tubandim
1984	Medjo Catesse Catungo
1985	Darsalame Flaque-Nd. Coboxante Fula Botchecul
1986	Cobumba Quebo Darauda Cabedu Campeane
1987	Mato-Farrar Cantone Cametungo Iemberém Cabulol Cad. Iala Guiledje Cameconde Nhacoba Cambaque Caiantico
1989	Unal Cafal Cassebetché Cad. Mbitna Caia
1989	Another 5 mills were sold, location not known to team

Source: Estudo das Descascadoras de Arroz Instaladas pelo DEPA-Caixa-anque na Região de Tombali, by Patrick Levaux, Oxfam-Bélgica, April 1989

ANNEX VI

AVERAGE MONTHLY RETAIL PRICES FOR RICE - BISSAU CITY

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REPUBLIC OF GUINEA BISSAU

AVERAGE MONTHLY RETAIL PRICES FOR RICE - BISSAU

(Pesos/kg) 1987-1989

Month	1987 1/	% of average	1988 2/	% of average	1989 2/	% of average
January	280.5	121.6%	338.0	60.9%	884.0	63.1%
February	336.0	145.7%	406.0	73.2%	888.0	63.4%
March	131.0	56.8%	330.0	59.5%	990.0	70.7%
April	132.0	57.2%	624.0	112.5%	1,389.0	99.2%
May	124.5	54.0%	591.0	106.5%	1,584.0	113.1%
June	175.5	76.1%	533.0	96.1%	1,384.0	98.8%
July	175.5	76.1%	673.0	121.3%	2,617.0	186.9%
August	523.0	226.7%	433.0	78.0%	1,451.0	103.6%
September	420.0	182.1%	550.0	99.1%	1,417.0	101.2%
October	180.5	78.3%	941.0	169.6%		
November	141.0	61.1%	617.0	111.2%		
December	<u>148.5</u>	64.4%	<u>622.0</u>	112.1%		
Average	230.7		554.8		<u>1,400.4</u>	

Source: Ministry of Planning; Statistics Department

File: Rice-Pr.WK1

01/15/90

Notes:

1. 1987 prices are weighted averages obtained from open retail market prices and subsidized rice received by public employees.
2. 1988 and 1989 price series are average retail prices; during 1988 public employees received subsidized rice at PG65/kg

ANNEX VII

ANALYSIS OF THE COST OF LANDING RICE AT BISSAU

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ANALYSIS OF THE COST OF LANDING RICE AT BISSAU

Item	Date of Landing Document	Pesos	Percent of C&F Cost	Landed Value Divided by C&F Value
	Dec. 12, 1988			
C&F Value in Pesos		3,125,780,592.000		
Insurance		136,335,647.000	0.044	
Port Charges (Despacho)		50,933,592.000	0.016	
Banking Expenses (Bancarias)		125,031,224.000	0.040	
Off-Loading & Transport (Movimentacao)		50,875,000.000	0.016	
Imobilized Financing Interest Charge		348,895,606.000	0.112	
Administrative Charge ADP		163,105,812.000	0.052	
Losses Charge		65,242,335.000	0.021	

Total Landed Value of Imported Rice in Bissau		4,066,199,808.000		
Total Cost Divided by C&F Value				1.301
	March 4, 1989			
C&F Value in Pesos		1,663,921,200.000		
Insurance		93,607,020.000	0.056	
Port Charges (Despacho)		26,759,868.000	0.016	
Banking Expenses (Bancarias)		70,699,631.000	0.042	
Off-Loading & Transport (Movimentacao)		28,379,000.000	0.017	
Imobilized Financing Interest Charge		188,336,672.000	0.113	
Administrative Charge ADP		87,876,411.000	0.053	

Total Landed Value of Imported Rice in Bissau		2,159,579,802.000		
Total Cost Divided by C&F Value				1.298
	April 3, 1989			
C&F Value in Pesos		3,260,619,171.000		
Insurance		214,007,477.000	0.066	
Port Charges (Despacho)		54,131,973.000	0.017	
Banking Expenses (Bancarias)		448,354,118.000	0.138	
Off-Loading & Transport (Movimentacao)		57,673,750.000	0.018	
Imobilized Financing Interest Charge		403,478,649.000	0.124	
Administrative Charge ADP		173,731,332.000	0.053	

Total Landed Value of Imported Rice in Bissau		4,611,996,470.000	0.414	
Total Cost Divided by C&F Value				1.414
	March 11, 1988			
C&F Value in Pesos		1,406,377,261.000		
Insurance		0.000		
Port Charges (Despacho)		27,525,275.000	0.020	
Banking Expenses (Bancarias)		45,269,224.000	0.032	
Off-Loading & Transport (Movimentacao)		42,475,538.000	0.030	
Imobilized Financing Interest Charge		152,164,730.000	0.108	
Administrative Charge ADP		70,318,863.000	0.050	

Total Landed Value of Imported Rice in Bissau		1,744,130,891.000		
Total Cost Divided by C&F Value				1.240
	Sept. 22, 1988			
C&F Value in Pesos		1,899,331,010.000		
Insurance		0.000		
Port Charges (Despacho)		47,461,970.000	0.025	
Banking Expenses (Bancarias)		56,979,930.000	0.030	
Off-Loading & Transport (Movimentacao)		46,250,000.000	0.024	
Imobilized Financing Interest Charge		205,002,294.000	0.108	
Administrative Charge ADP		94,966,550.000	0.050	

Total Landed Value of Imported Rice in Bissau		2,349,991,754.000		
Total Cost Divided by C&F Value				1.237

	Oct 17, 1988		
C&F Value in Pesos		1,604,517,552.000	
Insurance		9,996,624.000	0.006
Port Charges (Despacho)		41,573,419.000	0.026
Banking Expenses (Bancarias)		53,583,782.000	0.033
Off-Loading & Transport (Movimentacao)		42,569,100.000	0.027
Imobilized Financing Interest Charge		175,224,048.000	0.109
Administrative Charge ADP		80,725,709.000	0.050

Total Landed Value of Imported Rice in Bissau		2,008,190,234.000	
Total Cost Divided by C&F Value			1.252
	Aug 14, 1987		
C&F Value in Pesos		527,433,209.000	
Insurance		0.000	
Port Charges (Despacho)		34,101,817.000	0.065
Banking Expenses (Bancarias)		11,735,388.000	0.022
Off-Loading & Transport (Movimentacao)		28,462,250.000	0.054
Imobilized Financing Interest Charge		60,173,266.000	0.114
Administrative Charge ADP		26,371,660.000	0.050

Total Landed Value of Imported Rice in Bissau		688,277,591.000	
Total Cost Divided by C&F Value			1.305
Average Multiple of Landed Value Over C&F Value			1.292

ANNEX VIII
RICE IMPORTS AND EXPORTS

RICE IMPORTS AND EXPORTS

(Tons)

Year	Exports	Year	Imports
----	-----	----	-----
1931	666.4	1960	5512
1932	2894.5	1961	0.3
1933	3067	1962	2077
1934	5670	1963	3054
1935	4127	1964	8183
1936	3939.8	1965	8548
1937	3938	1966	5767
1938	1778.5	1967	12232
1939	4906.8	1968	3826
1940	7304.8	1969	22931
1941	5000	1970	13320
1942	406	1971	28904
1943	1218	1972	20354
1944	3654	1973	29779
1945	3248	1974	30626
1946	1624	1975	14314
1947	1900	1976	10891
1948	1624	1977	13309
1949	1218	1978	28107
1950	2030	1979	13094
1951	1100	1980	11948
1952	1218	1981	33046
1953	650	1982	16782
1954	1900	1983	22878
1955	4466	1984	17658
1956	1218	1985	10513
1957	85	1986	32098
1958	893	1987	30854
1959	1269	1988	37489
1960	1100	1989	39000
1961	604		
1962	261		
1963	9		
1964	9		

Source: Causas da Queda de Producao de Arroz na Guinea-Bissau, Anexo I

File: R-EXP-IMP

02/27/90

RICE IMPORTS BY QUARTER

Importacoes de arroz

Ano	Volume milhares de Tons.	Preco Medio USD/ton.	Valor Milhoes de USD.		
1986	32.098	180.70	5.8		
1987	30.854	204.19	6.3		3.854166
1988	37.489	250.74	9.4	254.8033	1.228
1989	39.000	280.00	10.9		
1987					
I	0.784	204.19	0.16	6.891	
II	8.570	204.19	1.75		
III	5.044	204.19	1.03(*)		
IV	16.455	204.19	3.36		
	30.854		6.3		
1988					
I	9.173	250.74	2.3		
II	7.578	250.74	1.9		
III	9.572	250.74	2.4		
IV	11.167	250.74	2.8		
	37.489		9.4		
1989					
I	6.418	280.00	1.8		
II	7.586	280.00	2.1		
III	12.996	280.00	3.6	21.496	6.019
IV	12.000	280.00	3.4	9940	0.98
	39.000		10.9 (**)	3.5	10.92
				8.5	

(*) Estes dados nao coincidem com os dados proporcionados pelas Alfandegas.
 (**) Segundo Alfandegas somente foram importados um valor de USD. 2.124 o que corresponde a 7,586 tons de arroz. No entanto o Ministerio de Comercio Autorizou uma importacao de 35.500 tons ate Setembro/89. Projectando um volume de importacao para todo ano entre 39 e 40 mil toneladas.

FONTE: Banco Nacional
 (Dept. Estudos Economicos E Estatisticos)

Dec. 8, 1989

ANNEX IX
HISTORICAL TIME SERIES OF PADDY PRODUCTION

RICE PRODUCTION BY REGION 1988/89 CROP YEAR

Region	Dry-land Area (ha)	Bas-fond Area (ha)	Mangrove Area (ha)	Total Area (ha)
Biombo	61	727	2,557	3,345
Cacheu	4,004	7,190	457	11,651
Oio	1,751	6,417	1,606	9,774
Bafata	1,203	3,675	15	4,893
Gabu	1,087	2,752	0	3,839
Quinara	1,293	887	712	2,893
Tombali	1,777	665	3,395	5,837
Bolama	3,145	600	52	3,797
Bas-fonds repiqués		3,436		3,436
Secteur Amenagé				3,000
Total	14,322	26,348	8,794	52,464

Region	Dry-land Volume (Tons)	Bas-fond Volume (Tons)	Mangrove Volume (Tons)	Total Volume (Tons)
Biombo	98	1,315	6,311	7,724
Cacheu	6,915	12,726	746	20,387
Oio	3,437	14,219	4,022	21,678
Bafata	2,221	8,114	30	10,365
Gabu	2,505	6,681	0	9,186
Quinara	2,296	1,561	1,487	5,344
Tombali	3,209	1,279	5,942	10,430
Bolama	5,999	1,361	109	7,469
Bas-fonds repiqués		7038		7,038
Secteur Amenagé				6,267
Total	26,680	54,294	18,647	105,888

Region	Dry-land Yield (t/ha)	Bas-fond Yield (t/ha)	Mangrove Yield (t/ha)	Total Yield (t/ha)
Biombo	1.59	1.81	2.47	2.31
Cacheu	1.73	1.77	1.63	1.75
Oio	1.96	2.22	2.50	2.22
Bafata	1.85	2.21	0.00	2.12
Gabu	2.30	2.43	0.00	2.39
Quinara	1.78	1.76	2.09	1.85
Tombali	1.81	1.92	1.75	1.79
Bolama	1.91	2.27	2.10	1.97
Bas-fonds repiqués				2.05
Secteur Amenagé				2.09
Total	1.86	2.06	2.12	2.02

Source: Recenseamento Agrícola 1988, DRA/GAPLA/DEA

HISTORICAL TIME SERIES OF PADDY PRODUCTION

Year	Tons
1976	94.0
1977	57.0
1978	92.5
1979	71.0
1980	33.5
1981	80.0
1982	85.6
1983	85.0
1984	70.0
1985	115.6
1986	125.0
1987	141.9

Regional Paddy Production

Region	1987	1986	1985
Bafatá	13,396	22,200	7,964
Biombo	8,571	27,460	5,520
Bolama	2,246	10,455	2,280
Cacheu	24,420	8,895	12,850
Gabu	9,607	8,010	2,262
Oio	31,030	1,265	22,443
Quínara	23,201	20,715	19,728
Tombali	25,781	22,615	42,534
SAAB	3,690	3,385	0
	-----	-----	-----
Total	141,942	125,000	115,581

Source: Anuário Estatístico, 1987, Ministerio do Desenvolvimento Rural e Agricultura, Bissau, Dezembro de 1988.

ANNEX X
PERSONS CONTACTED

PERSONS CONTACTED

Mrs. Anne Williams, USAID representative

Mr. Carlos Rui Ribeiro, Principal Investigator, Centro de Estudos Socio-Economicos, Instituto Nacional de Estudos e Pesquisa (INEP)

Mr. Andeke Lengui, FAO representative

Mr. Ibrahim Dieme, Director General, Ministry of Planning

Mr. Simon Sambia, FAO/CILSS, Ministry of Planning

Mr. Francisco Costas, Head of Statistics Department, Ministry of Agriculture
Mr. Graça Costas, advisor, Ministry of Agriculture

Mrs. Munira Jauad, Director General of External Commerce, Ministry of Economic Coordination, Commerce and Tourism

Mr. Aguinaldo Embalo, Director of Servicio de Desenvolvimiento Economico (DESECO)

Mr. Mora, former director of Armazens do Povo

Mr. Avelino Mendez, AP

Mr. Felix Hopffer, in charge of AP Delegation at Canchungo

Mr. Mario da Costa Ribeiro, merchant, Cacheu

Mr. Saimi Jose Amin, merchant, Cacheu

Mr. Arlindo Pires, the Secretary of the Region of Cacheu

Mr. Alfredo Prera, local representative of the Ministry of Finance in Cacheu

Mr. Sambateno Djelo, assistant of a local merchant Santo Domingo

Met three small merchants at Bissora

Mr. Barreto, merchant

Mr. Fará Heneni, large Importer/Exporter, Bafatá

Mr. Aires D'Alva, the president of the Cooperativa de Apoio a Agricultores de Provincia del Este (CAAPLE)

Mr. Capé, pontiero, Bafatá

Mr. Eugenio Negria, Portuguese mechanic who services the machinery of CAAPLE

Mr. Lamine Jaquité, a merchant of Gabu

Mr. Fernando Fragoso, a merchant of Gabu

Mr. Duarte, Ag. Eng., Experiment Station at Contuboel

Met 6 farmers in villages associated with DEPA project near Contuboel

Mr. Brito E. Silva, Sales Manager, CICER

Mr. Mandinga, proprietor of Geta Import/Export Co.

Met with chief of security and 6 merchants at Cacine

Mr. Camilo Balde, Director, DEPA (Departamento de Experimentação de Produccion de Arroz) at Caboxante

Met merchant at Caboxante

Met personnel from DEPA at Caboxante

Mr. Hector Zárata, Agronomist, DEPA, Caboxante

Mr. Manuel Saturnino Domingos de Costa, President of Tombali Region

Mr. Rogerio Caetan Barros, Secretary of Tombali Region

Mr. Van Look, Project Leader of the FAO/Kuwait Rice Project

Mr. Zé Zaldanka, merchant, Catió

Mr. Sissau Morera, merchant, Como Island

Farmers on the Island of Como

Mr. Nick ???, representative of STENAKS at Catió

Mr. Adib Aboul Hassan (Manuel Adib), Catió merchant

Mr. Manuel Diaz, Director of PDOT

Rice mill operators

Mr. Joao Cândido Cabral, merchant

Mr. Armando Cul, merchant, Tite (was out)

Mr. Paulo Lambo, merchant, Tite (was out)

Mr. Antonio Biam N'bata, merchant, Tite

Met six merchants and the Secretary of Falacunda

Met three merchants at Buba

Met Project leader of Chinese Project at Crantabá

Mr. Hikmat Kassim Assad, merchant, Sonaco
Mr. Armando ?? receiving clerk for AP Delegation at Farim

Mr. Alfa., merchant, Farim

Mrs. Marie Nammouk, a relative of Fará Heneni, who operates a general dry goods store in Bissau

Mrs. Antoine Abi Khalil, manager of the dry goods store

Mr. Maron Saad, a dry goods merchant with a shop north of the central, bazaar-type market

Mr. Sadjo Sila a wholesale/retail dry goods merchant in the Mercado Bandim

Mr. Frank D. Correl, Program and Management Consultant

Mr. Don G. McClelland, Economist, Program and Policy Coordination, USAID

Mrs. Janet A. Schulman, Project Development Office, REDSO/WCA

Mr. Alain Cordel, Manager of Program Alimentaire Mondial in GB

Mr. G. Scholteter Horst, General Manager of STENAKS Trading and Shipping Co.

Mr. Bernardino Cardoso, Minister of Planning

Mr. Julio Correa, Chief of Studies

Mr. Daniel Nionqui, Office of Food Security

M. Ives Tenecalla, Representative of the World Bank

Mr. Julio Barreto the adult son of the truck owner named Barreto

Mr. Alfredo Torres, a Bolivian economist providing the National Bank with assistance with its monetary policy

Mrs. Maria Wallace; cashew broker

ANNEX XI
LITERATURE

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