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**1988/89 Food Needs Assessment for
Guinea Bissau**

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Executive Summary

The total cereal production in Guinea Bissau for the 1988/89 agricultural season is estimated at 207,100 metric tons (in unmilled terms), which is slightly lower than the 1987/88 record. This year's strong performance continues the trend toward higher average production as agricultural price and marketing reforms slowly take effect. Following four successive good harvests, the aggregate 1988/89 food supply situation is satisfactory, suggesting that an adequate supply of cereals will be available in the country this year to support status quo levels of consumption (see Table 1).

There is some question as to whether status quo levels of consumption are appropriate benchmarks against which to measure cereal needs in Guinea Bissau. Historical analysis shows that per capita rates of consumption have consistently increased over the last four years. The adoption of an average parameter for measuring the level of cereals necessary to support consumption understates the actual level required to maintain the trend in consumption. Viewed from this perspective, the sufficiency of the aggregate food supply in 1988/89 is somewhat less certain, though still adequate.

Despite production levels that suggest aggregate self-sufficiency in cereals, Guinea Bissau continues to rely on commercial imports to supply a significant part of total cereal consumption. Self-sufficient levels of cereal *production* have not been accompanied by an attendant self-sufficiency in cereal *provision*. This is due to the lack of incentives for production to move from the farm to the urban market, and the associated channeling of domestic production to markets in Senegal and Guinea-Conakry.

Recent macroeconomic adjustments and policy reforms aimed at eliminating price distortions and increasing the efficiency of production and marketing systems in Guinea Bissau are beginning to have an effect. Rural incomes are rising and agricultural production continues to increase. But the fruits of these efforts are still consumed exclusively on the farm or outside the country, forcing the government to spend scarce foreign exchange or credit on imported food staples for the urban population.

Until new systems are firmly in place and all players both believe in and understand the new environment well enough to assume their intended roles, it is unlikely that the reforms will fully generate their intended effects. In the meantime, food aid requirements and programming decisions can not be based on aggregate analysis alone, for aggregate analysis will reflect only the increased food security of the country as a whole (primarily the rural sector) and ignore the tenuous food security position of those individuals who rely entirely on marketed cereals for their subsistence.

Table 1: Guinea Bissau: 1988/89 Aggregate Food Balance, All Cereals
(Based on Status Quo Consumption)

(In metric tons, unmilled)

| | Rice (1) | Rice | Wheat | Coarse | All Cereals |
|-------------------------------|----------|---------|-------|---------|-------------|
| Consumption (kg/cap) (2) | 96 | 144 | 10 | 65 | 219 |
| Population (in 000) (3) | 946 | 946 | 946 | 946 | 946 |
| Consumption requirement | 90,816 | 135,156 | 9,460 | 61,490 | 207,106 |
| Gross production | 96,982 | 145,400 | 0 | 80,000 | 225,400 |
| seed, feed and losses (15%) | 14,547 | 21,810 | 0 | 12,000 | 33,810 |
| Net production | 82,435 | 123,590 | 0 | 68,000 | 191,590 |
| Stock changes | 5,000 | 7,496 | 0 | 4,000 | 11,496 |
| Food exports | 15,000 | 22,489 | 0 | 0 | 22,489 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 15,000 | 22,489 | 0 | 0 | 22,489 |
| Domestic food supply | 62,435 | 93,605 | 0 | 64,000 | 157,605 |
| Import requirement | 28,381 | 42,551 | 9,460 | (2,510) | 49,501 |
| Commercial imports | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| registered | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| Consumption deficit | (5,119) | (7,674) | 6,960 | (2,510) | (3,224) |
| Food aid commitments | 0 | 0 | 5,000 | 0 | 5,000 |
| regular | 0 | 0 | 5,000 | 0 | 5,000 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Uncovered consumption deficit | (5,119) | (7,674) | 1,960 | (2,510) | (8,224) |

Notes:

(1) expressed in milled terms based on an assumed milling extraction rate of 66.7%

(2) Based on the simple average of aggregate consumption levels from 1984/85 - 1987/88

(3) FAO estimate

Table 2: Guinea Bissau: 1988/89 Aggregate Food Balance, All Cereals
(Based on Apparent Consumption in 1987/88)

(In metric tons, unmilled)

| | Rice (1) | Rice | Wheat | Coarse | All Cereals |
|-------------------------------|----------|---------|-------|--------|-------------|
| Consumption (kg/cap) (2) | 100 | 150 | 10 | 72 | 232 |
| Population (in 000) (3) | 946 | 946 | 946 | 946 | 946 |
| Consumption requirement | 94,600 | 141,829 | 9,460 | 68,112 | 219,401 |
| Gross production | 96,982 | 145,400 | 0 | 80,000 | 225,400 |
| seed, feed and losses (15%) | 14,547 | 21,810 | 0 | 12,000 | 33,810 |
| Net production | 82,435 | 123,590 | 0 | 68,000 | 191,590 |
| Stock changes | 5,000 | 7,496 | 0 | 4,000 | 11,496 |
| Food exports | 15,000 | 22,489 | 0 | 0 | 22,489 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 15,000 | 22,489 | 0 | 0 | 22,489 |
| Domestic food supply | 62,435 | 93,605 | 0 | 64,000 | 157,605 |
| Import requirement | 32,165 | 48,224 | 9,460 | 4,112 | 61,796 |
| Commercial imports | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| registered | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| Consumption deficit | (1,335) | (2,001) | 6,960 | 4,112 | 9,071 |
| Food aid commitments | 0 | 0 | 5,000 | 0 | 5,000 |
| regular | 0 | 0 | 5,000 | 0 | 5,000 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Uncovered consumption deficit | (1,335) | (2,001) | 1,960 | 4,112 | 4,071 |

Notes:

(1) expressed in milled terms based on an assumed milling extraction rate of 66.7%

(2) Based on aggregate consumption levels recorded in 1987/88

(3) FAO estimate

Table 3: Guinea Bissau: 1988/89 Aggregate Food Balance, All Cereals
(Based on GOGB Nutritional Standards)

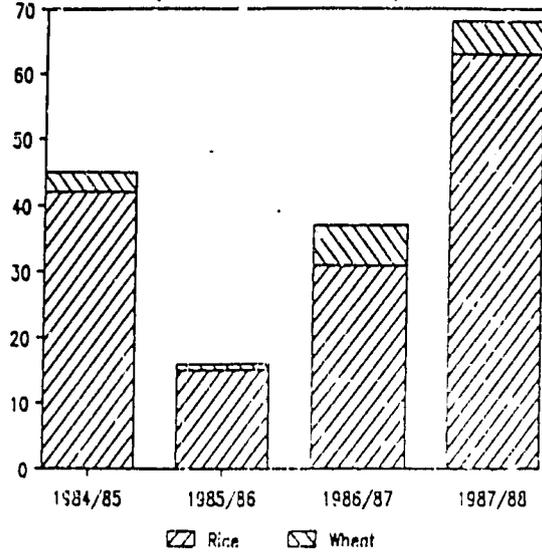
(In metric tons, unmilld)

| | Rice (1) | Rice | Wheat | Coarse | All Cereals |
|-------------------------------|----------|---------|-------|---------|-------------|
| Consumption (kg/cap) (2) | 110 | 165 | 10 | 65 | 240 |
| Population (in 000) (3) | 946 | 946 | 946 | 946 | 946 |
| Consumption requirement | 104,060 | 156,012 | 9,460 | 61,490 | 226,262 |
| Gross production | 96,982 | 145,400 | 0 | 80,000 | 225,400 |
| seed, feed and losses (15%) | 14,547 | 21,810 | 0 | 12,000 | 33,810 |
| Net production | 82,435 | 123,590 | 0 | 68,000 | 191,590 |
| Stock changes | 5,000 | 7,496 | 0 | 4,000 | 11,496 |
| Food exports | 15,000 | 22,489 | 0 | 0 | 22,489 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 15,000 | 22,489 | 0 | 0 | 22,489 |
| Domestic food supply | 62,435 | 93,605 | 0 | 64,000 | 157,605 |
| Import requirement | 41,625 | 62,407 | 9,460 | (2,510) | 69,357 |
| Commercial imports | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| registered | 33,500 | 50,225 | 2,500 | 0 | 52,725 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| Consumption deficit | 8,125 | 12,182 | 6,960 | (2,510) | 16,632 |
| Food aid commitments | 0 | 0 | 5,000 | 0 | 5,000 |
| regular | 0 | 0 | 5,000 | 0 | 5,000 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Uncovered consumption deficit | 8,125 | 12,182 | 1,960 | (2,510) | 11,632 |

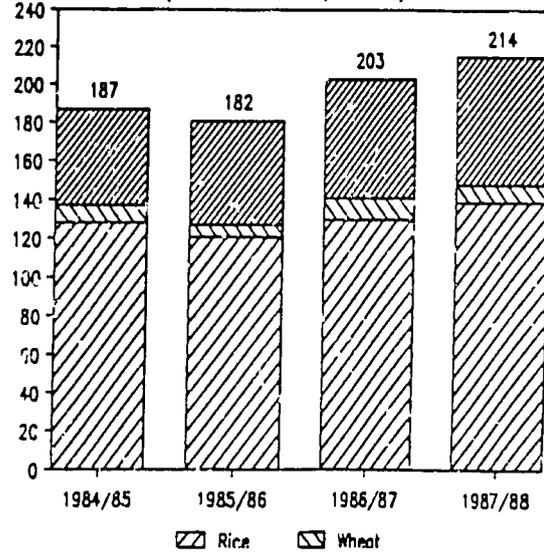
Notes:

- (1) expressed in milled terms based on an assumed milling extraction rate of 66.7%)
 (2) Based on nutritional norms outlined in (GOGB) "Bilan Cerealier Interieur, 1988/89"
 (3) FAO estimate

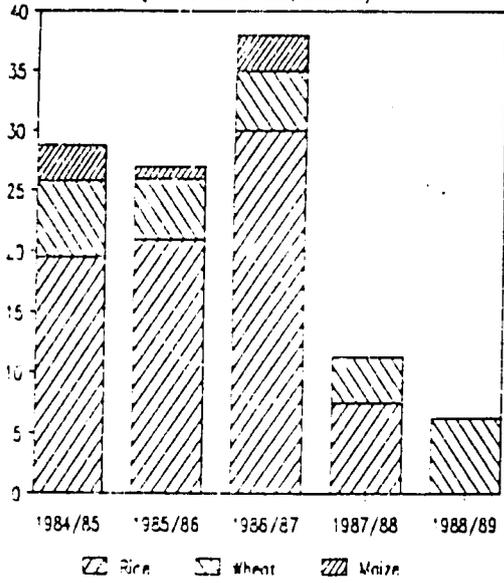
Commercial Cereal Imports
(In 000 metric tons, unmilled)



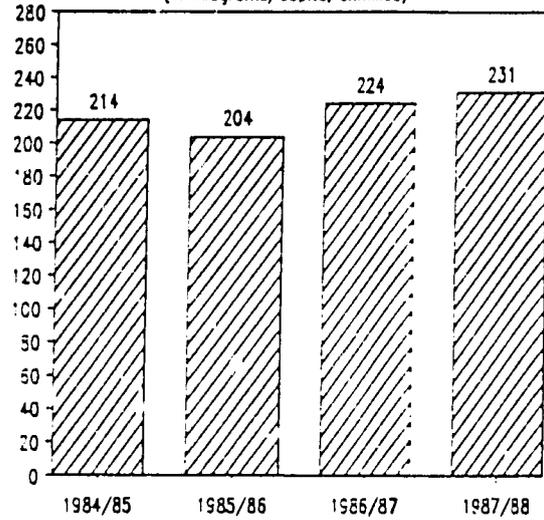
Total Food Supply
(In 000 metric tons, unmilled)



Food Aid Imports, 1984/85 - 1988/89
(In 000 metric tons, unmilled)



Consumption
(In kilograms/capita, unmilled)



I. Introduction: The Agricultural Sector in Guinea Bissau

General Characteristics

The economy of Guinea Bissau is predominantly agrarian in nature, with approximately 80 percent of the population engaged in farming and 60 percent of the gross domestic product coming from agriculture. Agriculture also supplies most of the raw materials for the country's industrial economy and is the major earner of foreign exchange.

The agricultural topography of the country is divided between a low coastal zone, which is subject to tidal submergence, and a slightly higher interior region marked by low, rolling hills, an interior plain and a region of low plateaux. The coastal zone is the most important agricultural zone, accounting for the bulk of rice, cassava, oil palm and cashew production. The interior zone is of major agricultural importance for dry culture cereals such as maize and millet, as well as cotton and groundnut.

The climate is tropical, characterized by a wet and a dry season. There is a slight distinction in weather patterns between the coastal and interior regions, with the coast being monsoonal and the interior showing characteristics similar to the southern savanna. The dry season lasts from December to April, and the wet season from June to October. Annual rainfall varies from 2,700 mm in the southern coastal areas to 1,250 mm in the extreme northwest.

Within the agricultural sector, crop production accounts for about 55 percent of total output, while livestock and fisheries/forestry account for 38 percent and 7 percent, respectively. The major food crops include rice, maize, millet, sorghum, cassava, oil palm, sweet potatoes and tropical fruits. Export crops include cashew nuts, groundnut, palm kernels, cotton, timber and, in recent years, fish and shrimp. The livestock sector, which is predominately non-commercial, is important for its contribution to crop production through animal traction and for the role meat plays in traditional celebrations.

Studies of land utilization show that only 10-15 percent of the approximately three million hectares of total land area in Guinea Bissau is used for permanent agriculture, and between 25-30 percent of that area is generally lying fallow. In 1976, according to a study by SCET International, 107,000 hectares were used for wetland rice, 105,000 hectares for rainfed cereals and 60,000 hectares for groundnut. With an estimated arable land potential of nearly one million hectares, there is considerable potential for expansion of agricultural production even under traditional farming systems.

The private and family farm sectors continue to account for most agricultural output. A number of state farms were established after 1974, but their contribution to production remains minimal. Improved agricultural practices and technologies, for the most part, have not caught on, due mostly to the typical problems associated with the availability of spare parts, petroleum products, repair services and the lack of technical training. In most instances, hoeing, weeding, and harvesting are still done by hand.

The use of agricultural inputs such as improved seeds, fertilizers and pesticides is minimal and restricted almost entirely to project areas. The national consumption of fertilizer per hectare of cultivated land in 1985/86 was estimated at only 2.9 kilograms, a very low level when compared with some other West African countries. The same year, only 10 percent and 30 percent of cultivated areas of rice and groundnut were sown with improved seed.

Trends in Agricultural Production

Historical levels of production and the natural resource base in Guinea Bissau suggest that the country could easily attain a level of self-sufficiency in the production of rice and other staple cereal grains, if not produce substantial surpluses for export. The country enjoyed exactly this position prior to the ten year war of independence, a war that brought significant destruction to the agricultural infrastructure and an exodus of rural population from the most productive regions.

After independence, production never regained its former levels. Government investment was focused on ill-conceived and unproductive industrialization schemes, with little attention to regaining the agricultural production capacity lost during the war. Inefficient marketing systems and inadequate pricing policies combined with a shortage of consumer goods for which to exchange production earnings convinced farmers to limit their production to home consumption or redirect sales to bordering countries. The GOGB resorted increasingly to foreign aid and cheap imports to provide for the basic food needs of the non-farming population.

In 1983 the Government made a fundamental decision to change its orientation from a centrally-planned economy to a market-oriented economy with an agricultural engine. With the assistance of the World Bank, IMF and the Swiss, the first phase of structural adjustment was begun. The Government set into action a program including the structured devaluation of the Peso, increases in producer and consumer prices and improved fiscal austerity. By 1985/86, the program lost momentum, and the Government recognized that the incremental changes outlined in the original program were simply inadequate to confront the magnitude of price distortions and macroeconomic disequilibria present.

In 1987, the country embarked on a new and comprehensive structural adjustment strategy outlined by the World Bank and supported by other multilateral institutions and a number of major donors. Long standing inequities in rural to urban terms of exchange are being addressed as the Peso is further devalued, increasing the relative price for locally-produced tradeables and causing real rural incomes to rise. More consumer goods have been made available to encourage farmers to take advantage of these changes and increase production and/or the amounts they market at home. Minimum producer prices have also been established and trade laws liberalized to further strengthen economic incentives behind production decisions.

II. 1988/89 Agricultural Campaign

Growing Conditions

The 1988 growing season got off to a false start with a period of short, intermittent rains followed, unexpectedly, by several weeks of dry conditions. This dry period, lasting into the first decade of July, adversely affected much of the seeding begun in mid-June. The onset of abundant and regular rainfall toward the end of the first decade in July marked the true beginning of the 1988 growing season and the widespread preparation of plots, seeding and reseeded.

Precipitation was normal to above normal in most areas for the remainder of July but by early August an overabundance of rainfall in some areas led to soil saturation and unfavorable conditions for certain dry culture crops, especially maize. The abundance of rain throughout the entire 1988 growing cycle made weed control especially difficult and delayed soil preparation and transplanting in lowland rice plots.

The month of October saw such an abrupt halt to the rains that the rice culture in some upland areas was at risk from overly dry conditions. The majority of dry culture crops, seeded primarily in July, ended their growing cycle in good hydraulic health.

Area Planted

There are few reliable data on area planted and yield in Guinea Bissau today. Data on acreage under cultivation, the basis for agricultural production estimates, are extrapolated from historical data in a 1955 study by Amilcar Cabral. Since that study, agriculture in Guinea Bissau has undergone significant structural changes, not excluding a long and costly war of independence that wrought considerable destruction on the agricultural infrastructure in the most productive region of the country.

In 1988 the Government, assisted by an FAO agricultural statistics expert, began the first comprehensive and systematic measurement of area and yield since the 1955 study. Data were collected from four family units in each of three hundred villages throughout the country. If this project continues as planned, reliable area and yield information should become available on an annual basis beginning with the 1988/89 campaign.

Unfortunately, at the time of this writing, the data for 1988/89 were not yet released, however some general conclusions were proffered. Most important among these is the likelihood that estimates of area planted have been overstated in the past, particularly with respect to regions where mangrove rice cultivation is prevalent. This is attributed to an overly optimistic estimate of the acreage capabilities of mangrove producers using traditional agricultural methods. A downward revision of the area estimates would lower historical production estimates, making it necessary to revise the status quo cereal consumption estimates used in this analysis.

Anecdotal information on area and yield in 1988/89 suggests that the expansion of area planted to mangrove rice continued this year, albeit tempered by a shortage of seed. This shortage was due in part to the need to reseed the earliest plots. The effects of late seeding and increased weed activity appear to have offset any increase in production that might have resulted from the increase in area planted.

III. 1988/89 Cereal Balance Variables

Commodity Coverage

Agricultural statistics in Guinea Bissau are too weak to permit an analysis of anything but cereals. Data on edible oils (palm nuts and kernels), roots and tubers are highly suspect, while estimates of milk and meat production simply do not exist. The analysis includes rice, wheat and coarse grains, with the latter broken out into maize, millet, sorghum and other.

Throughout the analysis, cereals are expressed in whole grain (unmilled) weight equivalents, with the exception rice, which is expressed in both milled and unmilled terms for ease of comparison with other reports. When comparing the information in this report with that of other authors, it may be necessary to make adjustments for the terms (milled or unmilled) in which the values are expressed. The milling extraction rates used in the conversion of data are always included in the footnotes to the tables.

Base Period

The base period for this assessment includes crop years 1984/85 through 1987/88. The selection of a four-year base period instead of the typical five-year period was dictated by serious quantitative deficiencies in agricultural data prior to 1984 (Indeed, representatives from the Ministry of Plan advised against using even 1984 data). As new statistical year data become available, the base period of this analysis should be altered to eliminate the weaker data years and take advantage of recent improvements in data collection techniques and resources.

Consumption Requirement

The total cereal required to support status quo consumption in Guinea Bissau in 1989 is 207,106 metric tons (see table 1). This is based on status quo per capita consumption levels of 96 kilograms (milled) for rice, 10 kilograms for wheat and 65 kilograms for other, coarse grain cereals. Broken out by commodity, this represents an annual requirement of 90,800 metric tons (milled) of rice, 9,460 metric tons of wheat, and 61,490 metric tons of coarse grains.

The status quo levels of consumption for Guinea Bissau were calculated from historical food utilization and supply data for the base period 1984/85 - 1987/88 (see Tables 4a - 4e). Annual data on gross production, non-food uses, stock changes, imports, exports and food aid were collected and analyzed to determine the apparent consumption of cereals in each base year. The simple average of the apparent consumption of each commodity over the base period

Table 4a.: Guinea Bissau: Status Quo Consumption (1984/85 - 1987/88)
All Cereals
(In metric tons, unmilled)

| | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------------|---------|---------|---------|---------|-----|
| Population (in 000) | 875 | 891 | 907 | 926 | 900 |
| Net Production | 135 | 154 | 170 | 196 | 164 |
| gross production | 159 | 181 | 200 | 231 | 193 |
| seed, feed and losses (15%) | 24 | 27 | 30 | 35 | 29 |
| Stock Changes | 6 | (4) | 18 | 24 | 11 |
| closing stocks | 13 | 9 | 27 | 51 | 25 |
| opening stocks | 7 | 13 | 9 | 27 | 14 |
| Commercial Trade | 29 | (3) | 12 | 31 | 17 |
| food imports | 45 | 16 | 37 | 68 | 42 |
| registered | 45 | 16 | 37 | 68 | 42 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| food exports | 16 | 19 | 25 | 37 | 24 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 16 | 19 | 25 | 37 | 24 |
| Food Aid | 29 | 27 | 39 | 11 | 27 |
| regular | 29 | 27 | 39 | 11 | 27 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Total Food Supply | 187 | 182 | 203 | 214 | 197 |

Source: FAO database

| Aggregate statistics: | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------|-----------------------------------|---------|---------|---------|-----|
| | (In kg/capita) | | | | |
| Consumption | 214 | 204 | 224 | 231 | 218 |
| Net production | 154 | 173 | 187 | 212 | 182 |
| Commercial imports | 51 | 18 | 41 | 73 | 46 |
| Non-aid food supply | 181 | 174 | 181 | 220 | 189 |
| Food aid | 33 | 30 | 43 | 12 | 30 |
| | (As percent of Total Food Supply) | | | | |
| Net production | 72% | 85% | 84% | 92% | 83% |
| Commercial imports | 24% | 9% | 18% | 32% | 21% |
| Non-aid food supply | 85% | 85% | 81% | 95% | 86% |
| Food aid | 15% | 15% | 19% | 5% | 14% |

Table 4b.: Guinea Bissau: Status Quo Consumption (1984/85 - 1987/88)
Rice
(In 000 metric tons, unmilled)

| | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------------|---------|---------|---------|---------|-----|
| Population (in 000) | 875 | 891 | 907 | 926 | 900 |
| Net Production | 89 | 99 | 106 | 121 | 104 |
| gross production (1) | 105 | 116 | 125 | 142 | 122 |
| seed, feed and losses (.15) | 16 | 17 | 19 | 21 | 18 |
| Stock Changes (2) | 6 | (6) | 12 | 15 | 7 |
| closing stocks | 9 | 3 | 15 | 30 | 14 |
| opening stocks | 3 | 9 | 3 | 15 | 7 |
| Commercial Trade (3) | 25 | (4) | 6 | 25 | 13 |
| food imports | 42 | 15 | 31 | 63 | 38 |
| registered | 42 | 15 | 31 | 63 | 38 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| food exports | 16 | 19 | 25 | 37 | 25 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 16 | 19 | 25 | 37 | 25 |
| Food Aid (4) | 19 | 21 | 30 | 7 | 19 |
| regular | 19 | 21 | 30 | 7 | 19 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Total Food Supply | 128 | 121 | 130 | 139 | 129 |

Source: FAO database

| Aggregate statistics: | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------|-----------------------------------|---------|---------|---------|-----|
| | (In kg/capita) | | | | |
| Consumption | 146 | 136 | 143 | 150 | 144 |
| Net production | 102 | 111 | 117 | 130 | 115 |
| Commercial imports | 48 | 17 | 35 | 68 | 42 |
| Non-aid food supply | 124 | 112 | 111 | 142 | 122 |
| Food aid | 22 | 23 | 33 | 8 | 22 |
| | (As percent of Total Food Supply) | | | | |
| Net production | 70% | 81% | 82% | 87% | 80% |
| Commercial imports | 33% | 12% | 24% | 45% | 29% |
| Non-aid food supply | 85% | 83% | 77% | 95% | 85% |
| Food aid | 15% | 17% | 23% | 5% | 15% |

Notes:

* milled values converted using milling extraction rate of 0.67

Table 4c.: Guinea Bissau: Status Quo Consumption (1984/85 - 1987/88)
Milled Rice
(In 000 metric tons)

| | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------------|---------|---------|---------|---------|-----|
| Population (in 000) | 875 | 891 | 907 | 926 | 900 |
| Net Production | 60 | 66 | 71 | 81 | 69 |
| gross production (.67) | 70 | 78 | 84 | 95 | 82 |
| seed, feed and losses (.15) | 11 | 12 | 13 | 14 | 12 |
| Stock Changes | 4 | (4) | 8 | 10 | 5 |
| closing stocks | 6 | 2 | 10 | 20 | 10 |
| opening stocks | 2 | 6 | 2 | 10 | 5 |
| Commercial Trade | 17 | (3) | 4 | 17 | 9 |
| food imports | 28 | 10 | 21 | 42 | 25 |
| registered | 28 | 10 | 21 | 42 | 25 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| food exports | 11 | 13 | 17 | 25 | 17 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 11 | 13 | 17 | 25 | 17 |
| Food Aid | 13 | 14 | 20 | 5 | 13 |
| regular | 13 | 14 | 20 | 5 | 13 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Total Food Supply | 86 | 81 | 87 | 93 | 87 |

Source: FAO database

| Aggregate statistics: | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------|-----------------------------------|---------|---------|---------|-----|
| | (In kg/capita) | | | | |
| Consumption | 98 | 91 | 96 | 100 | 96 |
| Net production | 68 | 74 | 78 | 87 | 77 |
| Commercial imports | 32 | 11 | 23 | 45 | 28 |
| Non-aid food supply | 83 | 75 | 74 | 95 | 82 |
| Food aid | 15 | 16 | 22 | 5 | 15 |
| | (As percent of Total Food Supply) | | | | |
| Net production | 70% | 81% | 82% | 87% | 80% |
| Commercial imports | 33% | 12% | 24% | 45% | 29% |
| Non-aid food supply | 85% | 83% | 77% | 95% | 85% |
| Food aid | 15% | 17% | 23% | 5% | 15% |

Table 4d.: Guinea Bissau: Status Quo Consumption (1984/85 - 1987/88)
Coarse Grains
(In 000 mt, unmilled)

| | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------------|---------|---------|---------|---------|-----|
| Population (in 000) | 875 | 891 | 907 | 926 | 900 |
| Net Production | 46 | 55 | 64 | 76 | 60 |
| gross production | 54 | 65 | 75 | 89 | 71 |
| seed, feed and losses (15%) | 8 | 10 | 11 | 13 | 11 |
| Stock Changes | 0 | 2 | 6 | 9 | 4 |
| closing stocks | 4 | 6 | 12 | 21 | 11 |
| opening stocks | 4 | 4 | 6 | 12 | 7 |
| Commercial Trade | 0 | 0 | 0 | 0 | 0 |
| food imports | 0 | 0 | 0 | 0 | 0 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| food exports | 0 | 0 | 0 | 0 | 0 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| Food Aid | 4 | 1 | 4 | 0 | 2 |
| regular | 4 | 1 | 4 | 0 | 2 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Total Food Supply | 50 | 54 | 62 | 67 | 58 |

Source: FAO database

| Aggregate statistics: | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------|-----------------------------------|---------|---------|---------|------|
| | (In kg/capita) | | | | |
| Consumption | 57 | 61 | 68 | 72 | 64 |
| Net production | 52 | 62 | 70 | 82 | 67 |
| Commercial imports | 0 | 0 | 0 | 0 | 0 |
| Non-aid food supply | 52 | 60 | 64 | 72 | 62 |
| Food aid | 5 | 1 | 4 | 0 | 3 |
| | (As percent of total food supply) | | | | |
| Net production | 92% | 102% | 103% | 114% | 103% |
| Commercial imports | 0% | 0% | 0% | 0% | 0% |
| Non-aid food supply | 92% | 98% | 94% | 100% | 96% |
| Food aid | 8% | 2% | 6% | 0% | 4% |

Table 4e.: Guinea Bissau: Status Quo Consumption (1984/85 - 1987/88)
Wheat
(In 000 metric tons, unmilled)

| | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------------|---------|---------|---------|---------|-----|
| Population (in 000) | 875 | 891 | 907 | 926 | 900 |
| Net Production | 0 | 0 | 0 | 0 | 0 |
| gross production | 0 | 0 | 0 | 0 | 0 |
| seed, feed and losses (15%) | 0 | 0 | 0 | 0 | 0 |
| Stock Changes | 0 | 0 | 0 | 0 | 0 |
| closing stocks | 0 | 0 | 0 | 0 | 0 |
| opening stocks | 0 | 0 | 0 | 0 | 0 |
| Commercial Trade (1) | 3 | 1 | 6 | 5 | 4 |
| food imports | 3 | 1 | 6 | 5 | 4 |
| registered | 3 | 1 | 6 | 5 | 4 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| food exports | 0 | 0 | 0 | 0 | 0 |
| registered | 0 | 0 | 0 | 0 | 0 |
| unregistered | 0 | 0 | 0 | 0 | 0 |
| Food Aid (2) | 6 | 5 | 5 | 4 | 5 |
| regular | 6 | 5 | 5 | 4 | 5 |
| emergency | 0 | 0 | 0 | 0 | 0 |
| Total Food Supply | 9 | 6 | 11 | 9 | 9 |

Source: FAO database

| Aggregate statistics: | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG |
|-----------------------|-----------------------------------|---------|---------|---------|-----|
| | (In kg/capita) | | | | |
| Consumption | 10 | 7 | 12 | 10 | 10 |
| Net production | 0 | 0 | 0 | 0 | 0 |
| Commercial imports | 3 | 1 | 7 | 6 | 4 |
| Non-aid food supply | 3 | 1 | 7 | 6 | 4 |
| Food aid | 7 | 6 | 5 | 4 | 6 |
| | (As percent of Total Food Supply) | | | | |
| Net production | 0% | 0% | 0% | 0% | 0% |
| Commercial imports | 29% | 20% | 56% | 57% | 40% |
| Non-aid food supply | 29% | 20% | 56% | 57% | 40% |
| Food aid | 71% | 80% | 44% | 43% | 60% |

Notes:

* milled (wheat flour) values converted using m.e.r. of 0.80

is used as the status quo consumption requirement for the current year of analysis (see Appendix A for detailed calculations of status quo consumption for all commodities.)

Estimate of Gross Cereal Production

The 1988/89 cereal harvest is estimated at 225,400 metric tons, including 145,500 metric tons of rice, and 79,900 metric tons of millet, maize and sorghum (see Tables 5a-5d). The harvest is 17 percent above the average for the previous four-year period, and falls just 3 percent short of last year's record for cereal production in the post-independence period.

Rice production increased almost 3 percent in 1988/89, accounting for 65 percent of total cereal production, compared to 61 percent in 1987/88. Coarse grain production fell 10 percent from last year's levels, due in large part to the adverse effects of excessive rain on the maize crop. Maize production was off a full twenty-five percent over last year, while millet and sorghum production decreased seven and five percent, respectively.

Regionally, aggregate cereal production increased in Gabu (5 percent), Quinara (3 percent), Tombali (7 percent), and the S.A.B (13 percent). In Biombo, Cacheu, Bafata, and Bolama production decreased marginally (3-5 percent), while in Oio the harvest was down 17 percent over last year. Gabu and Bafata showed strong increases in rice production (21 percent and 9 percent, respectively) while no region reported a significant improvement in the production of coarse grains. Oio and Bafata were lost heavily on coarse grains with shortfalls of 35 percent and 10 percent, respectively.

Adjustments for Feed, Seed and Losses

Gross domestic production is never available in its entirety for human consumption. Leakages attributed to non-food uses such as seed, feed, industrial uses and post-harvest losses must be evaluated and adjusted for. Unfortunately, data disaggregated by non-food use category are not available for most cereals in Guinea Bissau. Since cereal is not used as animal feed and other losses are considered typical of West African countries in general, an aggregate loss approximation equal to 15% of gross production is substituted. This value is consistent with those used by the GOGB and FAO in their calculations for Guinea Bissau.

Stock Changes

Estimates of net changes in cereal stocks this year must be viewed with some suspicion. The liberalization of rice prices and marketing, and the resulting influx of private traders, have made measurement and verification of cereal stock changes virtually impossible. Anecdotal reports only add to the confusion. However, it is reasonable to assume that farmers will increase their stocks in periods of good production. It is also reasonable to assume that those farmers who normally keep less than they need for the entire season (choosing to buy back later in the year) will increase the amount they hold in a year when future price levels are unpredictable. For these reasons, a 25 percent increase in on-farm rice stores is projected. Due to the mediocre production year for coarse grains, those stocks are not expected to show significant change over levels from last year.

Table 5a.: Guinea Bissau: 1988/89 Cereal Production by Region
(In metric tons, unmilled)

| Region | Rice | | Other Cereals | | All Cereals | |
|--------------|----------------|-------------|---------------|-------------|----------------|-------------|
| Biombo | 8,002 | 6% | 5000 | 6% | 13,002 | 6% |
| Cacbeu | 24,008 | 17% | 14000 | 18% | 38,008 | 17% |
| Oio | 29,100 | 20% | 12837 | 16% | 41,937 | 19% |
| Bafata | 14,550 | 10% | 21023 | 26% | 35,573 | 16% |
| Gabu | 11,610 | 8% | 19292 | 24% | 30,902 | 14% |
| Quinara | 24,007 | 17% | 1971 | 2% | 25,978 | 12% |
| Tombali | 27,645 | 19% | 3860 | 5% | 31,505 | 14% |
| Bolama | 2,183 | 2% | 240 | 0% | 2,423 | 1% |
| S.A.B. | 4,365 | 3% | 1662 | 2% | 6,027 | 3% |
| TOTAL | 145,470 | 100% | 79,885 | 100% | 225,355 | 100% |

Source: Ministere du Plan

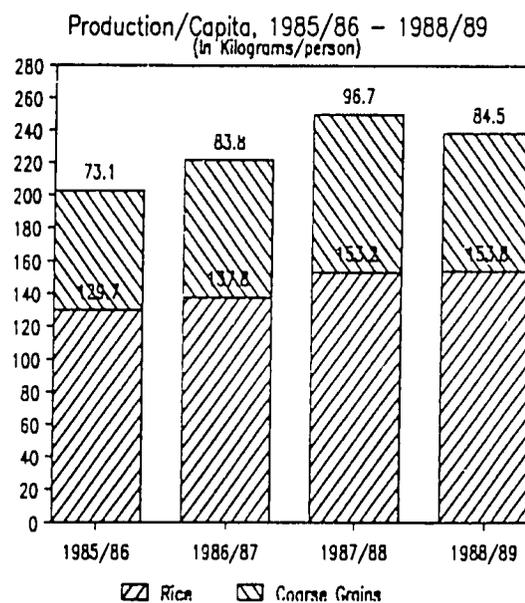
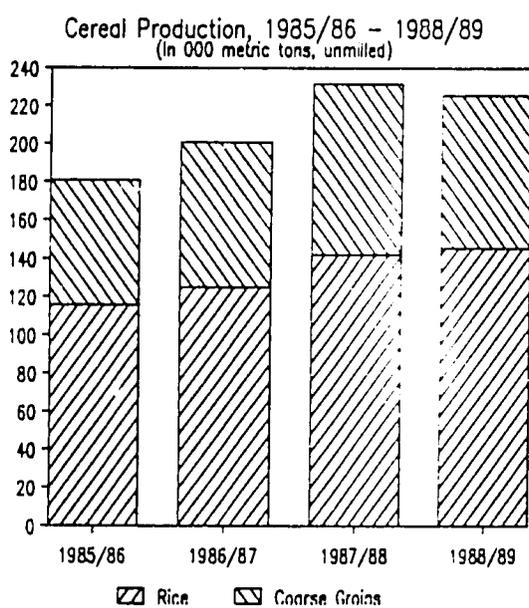


Table 5b.: Guinea Bissau: Total Cereal Production, 1985/86 - 1988/89
(In metric tons, unmilled)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|----------------|----------------|----------------|----------------|----------------|
| Biombo | 7,920 | 18,947 | 13,399 | 13,002 | 13,317 |
| Cacheu | 29,344 | 42,241 | 38,508 | 38,008 | 37,025 |
| Oio | 40,713 | 38,993 | 50,779 | 41,937 | 43,106 |
| Bafata | 18,529 | 26,970 | 36,755 | 35,573 | 29,457 |
| Gabu | 12,967 | 23,150 | 29,496 | 30,932 | 24,136 |
| Quinara | 21,104 | 18,840 | 25,133 | 25,978 | 22,764 |
| Tombali | 46,134 | 25,904 | 29,565 | 31,505 | 33,277 |
| Bolama | 3,927 | 1,482 | 2,481 | 2,423 | 2,578 |
| S.A.B. | n.a. | 4,475 | 5,319 | 6,027 | 3,955 |
| TOTAL | 180,638 | 201,002 | 231,435 | 225,385 | 209,615 |

(percent change over previous year)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|-----------|------------|------------|------------|-----------|
| Biombo | -- | 139% | -29% | -3% | -- |
| Cacheu | -- | 44% | -9% | -1% | -- |
| Oio | -- | -4% | 30% | -17% | -- |
| Bafata | -- | 46% | 36% | -3% | -- |
| Gabu | -- | 79% | 27% | 5% | -- |
| Quinara | -- | -11% | 33% | 3% | -- |
| Tombali | -- | -44% | 14% | 7% | -- |
| Bolama | -- | -62% | 67% | -2% | -- |
| S.A.B. | -- | ERR | 19% | 13% | -- |
| TOTAL | -- | 11% | 15% | -3% | -- |

Source: Ministere du Plan

Table 5c.: Guinea Bissau: Rice Production, 1985/86 - 1988/89
(In metric tons, unmilled)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|----------------|----------------|----------------|----------------|----------------|
| Biombo | 5,520 | 13,258 | 8,571 | 3,002 | 8,838 |
| Cachel | 12,850 | 28,676 | 24,420 | 24,008 | 22,489 |
| Oio | 22,443 | 24,739 | 31,030 | 29,100 | 26,828 |
| Bafata | 7,964 | 7,740 | 13,396 | 14,550 | 10,913 |
| Gabu | 2,262 | 6,182 | 9,607 | 11,610 | 7,415 |
| Quinara | 19,728 | 17,144 | 23,201 | 24,007 | 21,020 |
| Tombali | 42,534 | 22,613 | 25,781 | 27,645 | 29,643 |
| Bolama | 2,280 | 1,269 | 2,246 | 2,183 | 1,995 |
| S.A.B. | 0 | 3,385 | 3,690 | 4,365 | 2,860 |
| TOTAL | 115,581 | 125,006 | 141,942 | 145,470 | 132,000 |

(percent change over previous year)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|-----------|-----------|------------|-----------|-----------|
| Biombo | -- | 140% | -35% | -7% | -- |
| Cachel | -- | 123% | -15% | -2% | -- |
| Oio | -- | 10% | 25% | -6% | -- |
| Bafata | -- | -3% | 73% | 9% | -- |
| Gabu | -- | 173% | 55% | 21% | -- |
| Quinara | -- | -13% | 35% | 3% | -- |
| Tombali | -- | -47% | 14% | 7% | -- |
| Bolama | -- | -44% | 77% | -3% | -- |
| S.A.B. | -- | na | na | na | -- |
| TOTAL | -- | 8% | 14% | 2% | -- |

Source: Ministere du Plan

Table 5d.: Guinea Bissau: Coarse Grain Production, 1985/86 - 1988/89
(In metric tons, unmilled)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|---------------|---------------|---------------|---------------|---------------|
| Biombo | 2,400 | 5,689 | 4,828 | 5,000 | 4,479 |
| Cacheu | 16,494 | 13,565 | 14,088 | 14,000 | 14,537 |
| Oio | 18,270 | 14,254 | 19,749 | 12,837 | 16,278 |
| Bafata | 10,565 | 19,230 | 23,359 | 21,023 | 18,544 |
| Gabu | 10,705 | 16,968 | 19,889 | 19,292 | 16,714 |
| Quinara | 1,376 | 1,696 | 1,932 | 1,971 | 1,744 |
| Tombali | 3,600 | 3,291 | 3,784 | 3,860 | 3,634 |
| Bolama | 1,647 | 213 | 235 | 240 | 584 |
| S.A.B. | 0 | 1,090 | 1,629 | 1,662 | n.a. |
| TOTAL | 65,057 | 75,996 | 89,493 | 79,885 | 77,608 |

(percent change over previous year)

| Region | 1985/86 | 1986/87 | 1987/88 | 1988/89 | AVG |
|--------------|---------|------------|------------|-------------|-----|
| Biombo | -- | 137% | -15% | 4% | -- |
| Cacheu | -- | -18% | 4% | -1% | -- |
| Oio | -- | -22% | 39% | -35% | -- |
| Bafata | -- | 82% | 21% | -10% | -- |
| Gabu | -- | 59% | 17% | -3% | -- |
| Quinara | -- | 23% | 14% | 2% | -- |
| Tombali | -- | -9% | 15% | 2% | -- |
| Bolama | -- | -87% | 10% | 2% | -- |
| S.A.B. | -- | na | 49% | 2% | -- |
| Total | -- | 17% | 18% | -11% | -- |

Source: Ministere du Plan

Rice Exports

Although Guinea Bissau does not officially export rice, a significant amount of locally produced rice is smuggled across the border to Senegal and Guinea-Conakry each year. The FAO has estimated these flows at up to 27% of net production in a given year (see Tables 4a, 4e). While some portion of this trade results from proximity of border farms to local markets in other countries, or the lack of adequate infrastructure to permit an economical exchange of goods with Bissau or other urban centers within the country, an even larger part can be attributed to real or perceived differences in relative prices, currency stability, and/or the availability of consumer goods between countries.

Recent price and marketing reforms, in conjunction with the continued devaluation of the Peso, are intended to improve the incentive for farmers to both produce more and market more of their production locally. Although the reforms are on track, it may be some time before their full effect is felt. For the first six months of this year, cross border rice shipments are assumed to have taken place at a level equal to that of the past. However, price increases in the domestic market (see below) as well as the expanding impact of structural reforms should act to slow the shipment of rice out of the country in the last half of the year. For this reason, the original FAO estimate of 25,000 metric tons in unregistered rice exports for 1988/89 has been revised downward to 15,000 metric tons.

Commercial Imports

Commercial cereal imports in Guinea Bissau are comprised almost entirely of rice, originating, for the most part, in Pakistan and Thailand. Annual rice purchases abroad averaged 25,000 metric tons (milled) over the 1984/85 - 1987/88 period, with a high of 42,000 metric tons contracted last year (see Table 6). The GOGB estimates 1988/89 commercial rice purchases on the order of 32,000 metric tons. Approximately 2,500 metric tons of wheat flour is scheduled for commercial import as well. By April 30 of this year, nearly 13,000 metric tons of wheat and rice had arrived in Bissau (see Table 7).

Food Aid

Cereal food aid commitments remain low in light of continued good production and the expanding belief on the parts of many donors that Guinea Bissau has nearly recaptured self-sufficiency in cereal production. No new rice commitments exist at this time, and wheat flour contributions are expected to remain at the average level of 4,000 metric tons (see Table 8).

1988/89 Aggregate Cereal Balance

After adjusting gross domestic production for non-food uses, stock changes and cereal exports, the domestic food supply is estimated at 191,600 metric tons. Subtracting this domestic capacity from the total consumption requirement of 207,100 metric tons yields an import requirement of 50,000 metric tons. Against anticipated commercial imports of 54,000 metric tons for the year, the aggregate cereal deficit is completely offset, or, in status quo terms, thrown into surplus (see Table 1).

Table 6: Guinea Bissau: Commercial Cereal Imports, 1983/84 - 1988/89
(in 000 metric tons, unmilled)

| Commodity | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG | 1988/89 | % AVG |
|--------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Rice | 42.0 | 15.0 | 31.5 | 63.0 | 37.9 | 50.7 | 134% |
| Paddy | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| registered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Milled (.67) | 28.0 | 10.0 | 21.0 | 42.0 | 25.3 | 34.0 | 135% |
| registered | 28.0 | 10.0 | 21.0 | 42.0 | 25.3 | 34.0 | 135% |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Wheat | 2.5 | 1.3 | 6.3 | 5.0 | 3.8 | 2.5 | 67% |
| Whole grain | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| registered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Wheat flour (.80) | 2.0 | 1.0 | 5.0 | 4.0 | 3.0 | 2.0 | 67% |
| registered | 2.0 | 1.0 | 5.0 | 4.0 | 3.0 | 2.0 | 67% |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Other | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Whole grain | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| registered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Milled | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| registered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| unregistered | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | nr |
| Total commercial import | 44.5 | 16.2 | 37.7 | 68.0 | 41.6 | 53.2 | 128% |

Source: FAO

Table 7: Guinea Bissau: Armazens do Povo Cereal Imports, January 1988 - April 1989
(In metric tons)

(January - December, 1988)

| Date | Origin | Vessel | Commodity | Qty (milled) | Qty (unmilled) |
|--------|----------|-------------|-----------|--------------|----------------|
| Jan 14 | Thailand | Ilion | Rice | 5,000 | 7,496 |
| Feb 24 | France | Louise 1 | Wheat | 1,000 | 1,250 |
| Apr 6 | Pakistan | Samar Expr | Rice | 2,957 | 4,433 |
| Apr 8 | France | Louise 2 | Wheat | 1,000 | 1,250 |
| May 5 | Pakistan | Silver At | Rice | 2,233 | 3,348 |
| May 24 | Pakistan | Giorvas | Rice | 1,706 | 2,558 |
| Jun 3 | France | Louise 3 | Wheat | 733 | 916 |
| Jun 7 | Brazil | Cap Sunion | Rice | 6,000 | 8,996 |
| Jul 1 | Thailand | Albaky | Rice | 13,133 | 19,690 |
| Oct 3 | France | Louise 4 | Wheat | 1,100 | 1,375 |
| Oct | Thailand | Wallaroo | Rice | 5,000 | 7,496 |
| Dec 14 | Pakistan | Atlantic II | Rice | 4,500 | 6,747 |
| | | | | 44,362 | 65,554 |

(January - April, 1989)

| Date | Origin | Vessel | Commodity | Qty (milled) | Qty (unmilled) |
|--------|------------|------------|-----------|--------------|----------------|
| Jan 26 | Las Palmas | L. Limasol | Wheat | 2000 | 2500 |
| Feb 26 | Taiwan | Jupiter 1 | Rice | 5500 | 8,246 |
| Mar 16 | Taiwan | Jupiter 2 | Rice | 1673 | 2,508 |
| Apr 21 | Thailand | Expedient | Rice | 3000 | 4,498 |
| Apr 29 | Portugal | Logoa | Wheat | 700 | 875 |
| | | | | 12,873 | 18,627 |

Source: Armazens do Povo

Table 8: Guinea Bissau: Food Aid Imports, 1983/84 - 1988/89
(In 000 metric tons, unmilled)

| Commodity | 1984/85 | 1985/86 | 1986/87 | 1987/88 | AVG | 1988/89 | % AVG |
|-----------------------|-------------|-------------|-------------|-------------|-------------|------------|------------|
| Rice | 19.5 | 21.0 | 30.0 | 7.5 | 19.5 | 0.0 | 0% |
| Milled (.67) | 13.0 | 14.0 | 20.0 | 5.0 | 13.0 | 0.0 | 0% |
| regular | 13.0 | 14.0 | 20.0 | 5.0 | 13.0 | 0.0 | 0% |
| emergency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| Wheat | 6.3 | 5.0 | 5.0 | 3.8 | 5.0 | 5.0 | 100% |
| Whole grain | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| regular | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| emergency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| Wheat flour (.8) | 5.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 100% |
| regular | 5.0 | 4.0 | 4.0 | 3.0 | 4.0 | 4.0 | 100% |
| emergency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| Maize | 3.0 | 1.0 | 3.0 | 0.0 | 1.8 | 0.0 | 0% |
| Whole grain | 3.0 | 1.0 | 3.0 | 0.0 | 1.8 | 0.0 | 0% |
| regular | 3.0 | 1.0 | 3.0 | 0.0 | 1.8 | 0.0 | 0% |
| emergency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| Milled (.8) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| regular | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| emergency | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | na |
| Total food aid | 28.7 | 27.0 | 38.0 | 11.2 | 26.2 | 5.0 | 19% |

Source: FAO

43

Broken out by commodity, the aggregate deficit calculations reveal consumption requirements of 90,800 metric tons (milled) of rice, 9,400 metric tons of wheat, and 61,500 metric tons of coarse grains. When compared to the available domestic food supplies of each of these commodities, it is clear that rice accounts for the largest share (85 percent) of the total import requirement, while wheat accounts for the rest and coarse grains show a slight surplus. After anticipated commercial imports of 33,500 metric tons (milled) of rice, the status quo analysis suggests a small surplus of 5,000 metric tons (milled). Wheat imports of approximately 2,500 metric tons fall just short of fulfilling consumption requirements, leaving a deficit of 2,000 metric tons.

IV. Further Issues for Consideration

Status Quo vs. Trend Analysis in Estimating Consumption

The surplus rice supply in 1988/89 suggested in the status quo analysis is somewhat artificial, resulting from the use of an average consumption parameter in a situation clearly characterized by increasing annual rates of consumption. Although consumption over the base period shows a clear upward trend, from 214 kilograms in 1984/85 to 231 kilograms last year, status quo methodology uses an estimate for average consumption over the base period, 218 kilograms, when calculating the total cereal necessary to support consumption in 1988/89 (see Table 1). The use of an *average* value ignores the recent *trend* in per capita consumption, thereby understating the total cereal needs for the current year.

If the analysis is adjusted to reflect per capita cereal consumption equal to the level of consumption measured in 1987/88, instead of the average for the base period, the total consumption requirement for 1988/89 jumps to 219,400 metric tons, reducing the aggregate surplus from 14,200 metric tons to 1,900 metric tons (see Table 2). The share of this surplus attributed to rice drops from 9,100 metric tons to 5,300 metric tons (milled). If the analysis were to extrapolate a current year consumption value based on the recent trend in cereal consumption (an increase of 2-3 percent is likely), the surplus would be reduced further, if not eliminated entirely.

The GOGB has proposed annual nutritional norms for rice and other cereals of 110 kilograms and 66 kilograms, respectively. When these norms are used to determine 1988/89 consumption requirements, an uncovered aggregate cereal deficit of 5,600 metric tons is indicated (see Table 3). While these nutritional norms are certainly realistic, they overstate cereal needs to the extent that the analysis does not capture 100 percent of available supply.

Structural Adjustment and the Food Sector

The effects of the structural reforms are beginning to appear. Cereal production increased 45 percent between 1984/85 and 1987/88 and would have set a new record this year if not for the irregularities in rainfall described earlier in this report (see Table 5b). However, patterns in the distribution of this extra production suggest that price distortions, either real or

perceived, continue to exist. Although Guinea Bissau produces enough cereal to meet the total domestic requirement, it is still forced to import, commercially, an amount of rice equal to or greater than total urban consumption. Domestic production in excess of what is consumed on the farm appears to remain on the farm in stores or find its way across the border.

The failure of production to increase more rapidly or for increased production to find its way to the home market could be the result of several factors. To some extent, certainly, it reflects a disinclination on the part of the farmer to exchange produce for currency that could drop in value overnight, especially when the opportunity to earn hard (or harder) currency is easily at hand. Related to the issue of currency is the availability of consumer goods in markets where that currency is accepted. Even a stable currency is of relatively no use in a market devoid of goods for sale.

A more likely explanation for the continued absence of domestically produced grain in the local markets is that, at least until very recently, relative prices faced by farmers and traders favored the sale of grain abroad. A look at official producer prices in both current and constant terms (see Tables 10a-10b) reveals that, in spite of frequent and significant increases in the government's guaranteed farmgate prices, guaranteed price opportunities in the home market are, in fact, declining. There is nothing to stop the farmer from negotiating a price above the minimum guarantee, as they most often do, but the need to negotiate is inconsistent with the intention of a guaranteed price in the first place.

For now, marketing relationships are relatively unproven, price information does not flow freely to all participants in the market, and the long term stability of the Peso is uncertain. Until structural changes have had a chance to take hold, and until farmers and traders alike believe in and understand the new environment well enough to assume their intended roles, it is unlikely that the reforms will fully generate the desired effects. In the meantime, the many intermediate processes of change will make it quite difficult to predict or even adequately describe the dynamics of the food sector.

Unregistered Rice Exports

Price incentives for unregistered exportation of rice may be changing. The reasons for this are varied. With the removal of the rice subsidy for civil servants and the de facto liberalization of rice pricing policies earlier this year, the real price the farmer or trader can expect to realize at home is increasing. The price of one kilogram of rice in Bissau and other urban centers in the first two quarters of this year was approximately 1000 Pesos. By early July, the price had increased to 2000 Pesos. A quick look at exchange rate opportunities for various currencies does not suggest a similar devaluation of the Peso against neighboring currencies, making the value of a bag of rice offered for sale in the home market nearly twice as great as the same bag offered for sale across the border (see Table 9).

The severe increase in rice prices midway through the year was triggered in part by an acute shortage of rice in urban markets, due to the late arrival of 10,000 metric tons of imported rice. In a country where urban consumption is satisfied almost entirely from commercial imports and food aid, and where the total urban consumption requirement is less than 25,000 metric tons annually, the late arrival of any shipment can cause a temporary frenzy

Table 9: Effective Retail Rice Price Equivalents (July 10, 1989)

Parallel Market Exchange Rates

| | GB Peso | US Dollar | Dalasi | CFA | Guinea Franc |
|------------------|---------|-----------|---------|-------|--------------|
| (in terms of...) | | | | | |
| GB Peso | 1.000 | 2400.000 | 258.065 | 8.000 | 0.000 |
| US Dollar | 0.000 | 1.000 | 0.133 | 0.003 | 0.000 |
| Dalasi | 0.004 | 7.500 | 1.000 | 0.021 | 0.000 |
| CFA | 0.125 | 332.000 | 47.619 | 1.000 | 0.000 |
| Guinea Franc | ERR | ERR | ERR | ERR | 1.000 |

Retail Price Equivalents/Kg.

| | Home Price | GB Peso | \$US | Dalasi | CFA | Guinea Franc |
|---------|------------|---------|------|--------|-----|--------------|
| Bissau | 1,800 | 1,800 | 0.75 | 6.98 | 225 | ERR |
| Banjul | 3 | 774 | 0.40 | 3.00 | 143 | ERR |
| Dakar | 130 | 1,040 | 0.39 | 2.73 | 130 | ERR |
| Conakry | 1 | ERR | ERR | ERR | ERR | 1 |

Retail Price Equivalents/50 Kg. Bag

| | Home Price | GB Peso | \$US | Dalasi | CFA | Guinea Franc |
|---------|------------|---------|-------|--------|--------|--------------|
| Bissau | 90,000 | 90,000 | 37.50 | 348.75 | 11,250 | ERR |
| Banjul | 150 | 38,710 | 20.00 | 150.00 | 7,143 | ERR |
| Dakar | 6,500 | 52,000 | 19.58 | 136.50 | 6,500 | ERR |
| Conakry | 0 | ERR | ERR | ERR | ERR | 50 |

Retail Price Equivalents/Metric Ton

| | Home Price | GB Peso | \$US | Dalasi | CFA | Guinea Franc |
|---------|------------|-----------|--------|--------|---------|--------------|
| Bissau | 1,800,000 | 1,800,000 | 750.00 | 6,975 | 225,000 | ERR |
| Banjul | 3,000 | 774,194 | 400.00 | 3,000 | 142,857 | ERR |
| Dakar | 130,000 | 1,040,000 | 391.57 | 2,730 | 130,000 | ERR |
| Conakry | 0 | ERR | ERR | ERR | ERR | 1,000 |

26

Table 10a.: Guinea Bissau: Official Producer Prices, 1980 -1989
(in current Pesos/kg)

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|------------------|------|------|------|------|------|------|------|-------|-------|-------|
| Rice (paddy) | 8.5 | 8.5 | 9.5 | 9.5 | 14.5 | 24.0 | 37.5 | 50.0 | 85.0 | 180.0 |
| % change | | 0% | 12% | 0% | 53% | 66% | 56% | 33% | 70% | 112% |
| index (1980=100) | 100 | 100 | 112 | 112 | 171 | 282 | 441 | 588 | 1000 | 2118 |
| Rice (milled) | 14.0 | 14.0 | 14.0 | 14.0 | 23.5 | 42.5 | 50.0 | 95.0 | 300.0 | |
| % change | | 0% | 0% | 0% | 68% | 81% | 18% | 90% | 216% | |
| index (1980=100) | 100 | 100 | 100 | 100 | 168 | 304 | 357 | 679 | 2143 | |
| Groundnut | 7.5 | 7.5 | 9.2 | 9.2 | 15.5 | 25.0 | 32.5 | 40.0 | 80.0 | 140.0 |
| % change | | 0% | 23% | 0% | 68% | 61% | 30% | 23% | 100% | 75% |
| index (1980=100) | 100 | 100 | 123 | 123 | 207 | 333 | 433 | 533 | 1067 | 1867 |
| Palm kernel | 5.5 | 5.5 | 6.0 | 6.0 | 11.5 | 19.0 | 25.0 | 25.0 | 80.0 | |
| % change | | 0% | 9% | 0% | 92% | 65% | 32% | 0% | 220% | |
| index (1980=100) | 100 | 100 | 109 | 109 | 209 | 345 | 455 | 455 | 1455 | |
| Cashew nut | 6.0 | 6.0 | 9.5 | 9.5 | 17.5 | 28.5 | 38.5 | 125.0 | 200.0 | |
| % change | | 0% | 58% | 0% | 84% | 63% | 35% | 225% | 60% | |
| index (1980=100) | 100 | 100 | 158 | 158 | 292 | 475 | 642 | 2083 | 3333 | |

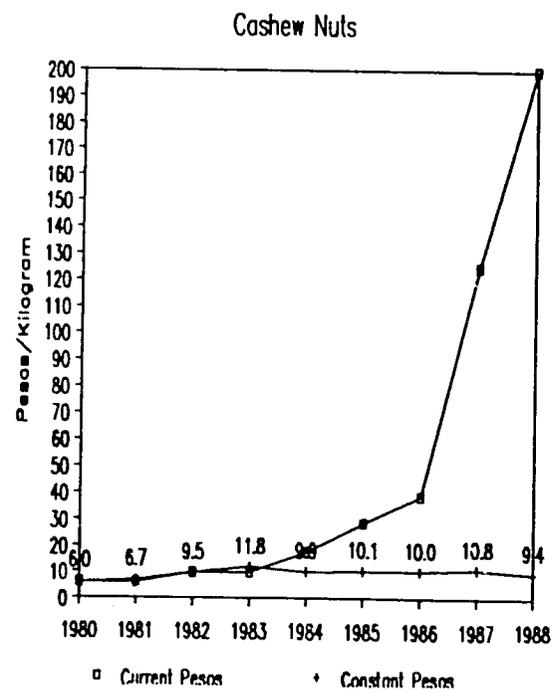
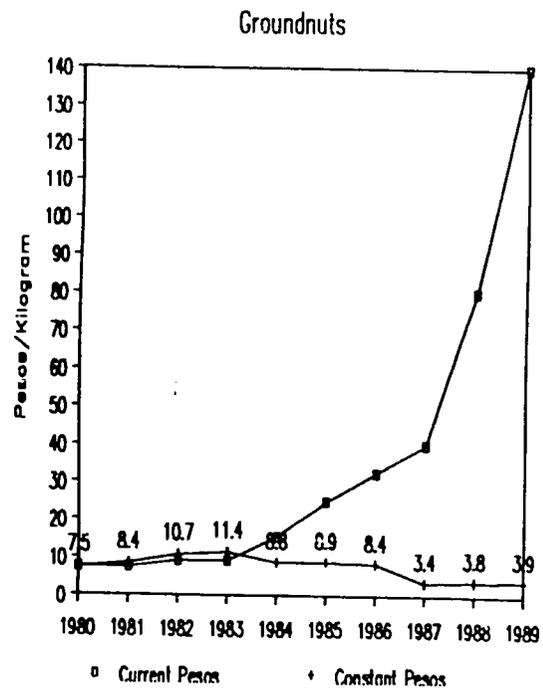
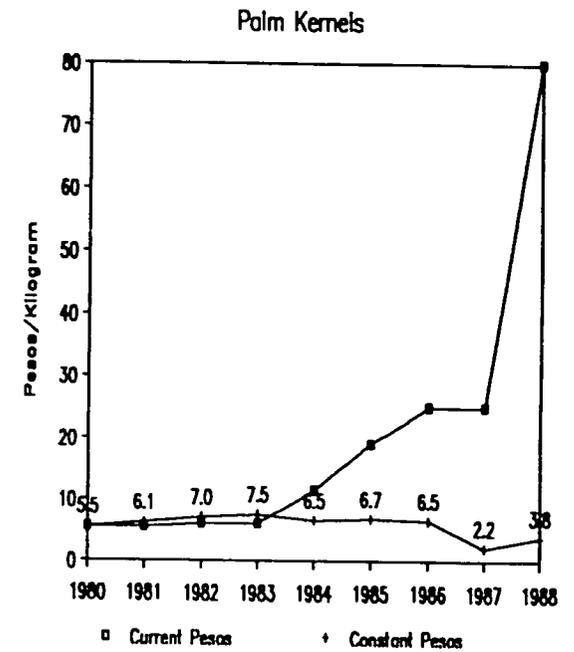
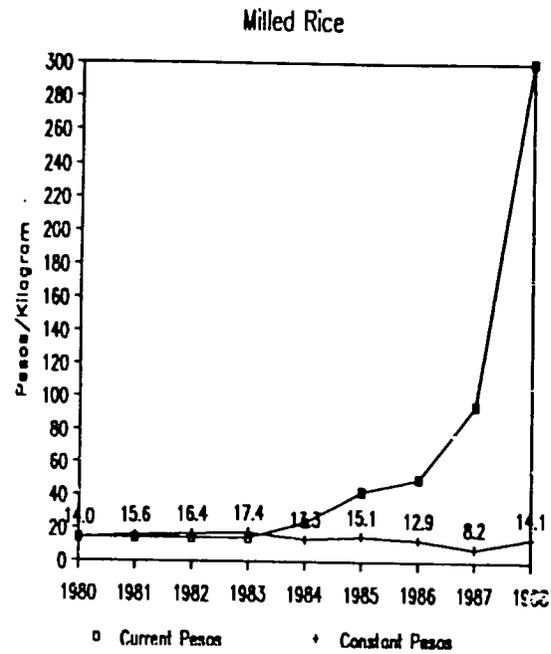
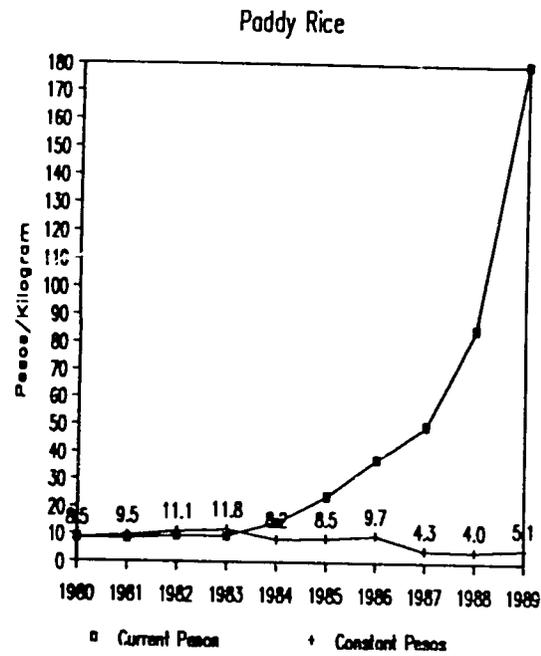
Source: Ministere du Plan

Table 10b.: Guinea Bissau: Official Producer Prices, 1980 -1989
(in constant Pesos/kg)

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|------------------|------|------|------|------|------|------|------|------|------|------|
| Rice (paddy) | 8.5 | 9.5 | 11.1 | 11.8 | 8.2 | 8.5 | 9.7 | 4.3 | 4.0 | 5.1 |
| % change | | 12% | 17% | 6% | -31% | 4% | 14% | -56% | -7% | 27% |
| index (1980=100) | 100 | 112 | 131 | 139 | 96 | 100 | 114 | 51 | 47 | 60 |
| Rice (milled) | 14.0 | 15.6 | 16.4 | 17.4 | 13.3 | 15.1 | 12.9 | 8.2 | 14.1 | |
| % change | | 12% | 5% | 6% | -24% | 13% | -14% | -37% | 73% | |
| index (1980=100) | 100 | 112 | 117 | 124 | 95 | 108 | 92 | 58 | 101 | |
| Groundnut | 7.5 | 8.4 | 10.7 | 11.4 | 8.8 | 8.9 | 8.4 | 3.4 | 3.8 | 3.9 |
| % change | | 12% | 28% | 6% | -23% | 1% | -5% | -59% | 9% | 5% |
| index (1980=100) | 100 | 112 | 143 | 152 | 117 | 118 | 112 | 46 | 50 | 53 |
| Palm kernel | 5.5 | 6.1 | 7.0 | 7.5 | 6.5 | 6.7 | 6.5 | 2.2 | 3.8 | |
| % change | | 12% | 14% | 6% | -13% | 3% | -4% | -67% | 75% | |
| index (1980=100) | 100 | 112 | 127 | 136 | 118 | 122 | 118 | 39 | 68 | |
| Cashew nut | 6.0 | 6.7 | 9.5 | 11.8 | 9.9 | 10.1 | 10.0 | 10.8 | 9.4 | |
| % change | | 12% | 42% | 24% | -16% | 2% | -1% | 8% | -12% | |
| index (1980=100) | 100 | 112 | 158 | 197 | 165 | 168 | 166 | 179 | 157 | |

Source: Ministere du Plan

Guinea Bissau: Official Producer Prices (Constant vs. Current Pesos)



in the market. The question remains, what will happen to rice prices now that imported rice is back on the market? Most individuals familiar with the rice market in Guinea Bissau feel quite strongly that once rice prices go up they do not easily come back down. If this is the case, farmers and traders alike will face greater incentives than ever before to reduce cross-border shipments and sell their produce domestically.

Given the significance a reversal of this nature would have for domestic rice supplies and aid programming, it is in the interest of the Office of the A.I.D. Representative to monitor comparative market rice prices and exchange opportunities in the region. Although it is nearly impossible to accurately measure the volume of unofficial exports in any given year, it is not too difficult to monitor the "magnitude and direction" of regional relative price incentives. Price and exchange rate data should be collected from various markets on a periodic basis and converted to relative terms using the template developed in Bissau in early July (see Table 9). By following the magnitude and direction of regional price incentives, the Mission will have a better idea of what to expect in terms of cross-border rice flows into or out of Guinea Bissau.

The GOGB "Bilan Previsionnel 1988/89"

The cereal deficit calculations in the GOGB annual cereal balance report to donors, *Bilan Cerealier Previsionnel de L'Annee 1988/89* (April 1989), suggest an import requirement in rice of 42,000 metric tons. While this figure is not inconsistent with that reported in the above analysis, the treatment of certain variables is quite different and should be investigated.

Although the GOGB food security personnel are familiar with and employ (in internal documents) the status quo method for determining per capita cereal consumption, they choose to rely on nutrition-based criteria when calculating a cereal balance for donor inspection. Where the status quo method yields an average annual cereal consumption of 219 kilograms per capita (144 kilograms of rice, 75 kilograms of other cereals), the nutritional norms chosen by the GOGB propose a per capita consumption of 230 kilograms (165 kilograms of rice, 65 kilograms other). This 11 kilogram spread in aggregate per capita consumption standards represents a net increase in total cereal needs of only 10,500 metric tons per year, but a gross increase in the requirement for rice of nearly 20,000 metric tons.

USAID and FAO do not base their assessments on nutritional norms. Instead, they base the analysis on recorded levels of apparent consumption from all sources (production, stocks, trade and aid) over a recent historical period. In essence, this measures the level of cereal necessary to keep individuals consuming at a level to which they have become accustomed. This approach avoids the many normative arguments involved in determining an appropriate nutritional standard and prevents the overestimation of cereal deficits in situations where the analysis is unable to capture 100 percent of available supply.

Further along in the government's food balance, a net increase in rice stocks of 15,600 metric tons (milled) is indicated. Increasing food stocks decreases the amount of current year production available for consumption. An increase of this magnitude represents an 80 percent increase in closing stock levels over last year. One explanation for such a significant change in stock carryovers would be the government's desire to build a security stock in rice. However, the Government has made a separate line item adjustment for just such a stock later on in the

balance. Although some increase in rice stockage is likely, due to the successive years of good production, an increase of this magnitude is quite questionable.

The GOGB cereal balance calculations in the April 1989 report notably do not include supply adjustments for commercial imports and exports of cereals, nor do they subtract from the deficit any food aid already committed or shipped. Although food aid is relatively insignificant for 1988/89, commercial import levels are quite high and the unofficial export of rice promises to be the major determining factor in the cereal balance analysis.

Finally, as mentioned above, the *Bilan Cerealier Interieur de L'Annee 1988/89* includes the creation of a three month security stock comprised of 17,500 metric tons of rice. The report does not include any mention of where these stock would be held or how they would be controlled, and attempts to ascertain such information went unrewarded. It is highly unlikely that the donor community will assist in the creation of a security stock of this nature in a year of high rice prices and without further documentation from the Government.

Reliability of Data

Agricultural production estimates, for instance, are based on approximations for area under cultivation that recent studies show to be significantly overstated. Other estimates, such as stock changes and unofficial exports of rice, are nearly impossible to quantify, and should be taken only as rough approximations of orders of magnitude until better information is available.

Because the data behind the analysis are often only approximations of reality, the analysis itself should be viewed as no more than an approximation of the food sector situation in Guinea Bissau. This does not mean that the analysis is not valid, but that the degree to which it is valid is not yet known. It is only through this type of endeavor that the estimations and assumptions inherent in food sector analysis are hung out for the scrutiny, criticism and constant re-application by others that is necessary to transform them from mere approximations to valid estimates.

It is also possible that this assessment includes some very measurable data that are, quite simply, wrong. In the case of food aid donations, registered commercial imports, etc., it is possible that knowledgeable contacts were overlooked or not available for interviews during the short period in which these data were collected. It is important to the development of reliable food sector information in Guinea Bissau that informed individuals call these discrepancies or inconsistencies to the attention of the Office of the A.I.D. Representative so that the analysis contained in this report can be corrected and improved.

Limitations of Aggregate Level Analysis

The analysis in this report is based on aggregate, or national level, data and is not intended to provide a specific breakdown of production or consumption patterns by age, gender, region, ethnic group, or rural/urban habitation. To facilitate the comparison of relative vs. absolute food sector health from year to year, aggregate data have been expressed in per capita terms. It should be recognized that per capita figures are national averages and are not intended to represent the actual consumption parameters of any specific group. In Guinea

Bissau, consumption estimates based on aggregate analysis are likely to understate the consumption of rice in urban areas while overstating its consumption in rural parts of the country. The inverse is true of food items such as millet and sorghum. This will not effect the validity of the analysis at the aggregate level.

Aggregate level analysis alone, however, is often not sufficient to provide a complete understanding of the true food needs and availabilities within the country. Pockets of poor production, insect damage, storage losses, etc. can seriously effect consumption opportunities at the household, village or regional level. Episodic or chronic financial limitations can restrict the access of certain individuals or groups to food that is readily available in the markets. In Guinea Bissau, structural changes in the form of increased prices of staple cereals, removal of civil service food subsidies, and public sector layoffs will increasingly effect and disrupt previous food availability and distribution patterns. It is important that the Government and donors monitor the food needs of those hardest hit by the structural adjustment process. The deficiencies in the food security of these individuals will not be reflected in the aggregate analysis.

This analysis is limited to a very general evaluation of the food resources available to the country as a whole, and is not capable of identifying inequities or irregularities in the distribution of these resources among regions, ethnic groups, members of households or (of particular importance in the case of Guinea Bissau) rural and urban consumers. Complimentary information in the form of nutritional and household consumption surveys, regional production and consumption analyses, and studies of intra-regional/rural-urban movements of food commodities is necessary in order to adjust aggregate analysis for disaggregate reality in the food sector.