

PJ - AEB - (32)

LA 51745

# **AGRICULTURAL POLICY ANALYSIS PROJECT**

---

---

Sponsored by the

## **U.S. Agency for International Development**

Assisting AID Missions and Developing Country Governments  
to Improve Food and Agricultural Policies

Prime Contractor: Abt Associates Inc.

Subcontractors: Robert R. Nathan Associates, Inc.  
Abel, Daft & Earley, Inc.  
Oklahoma State University

Abt Associates Inc.  
Suite 500  
4250 Connecticut Avenue, N.W., Washington, D.C. 20008-1173  
Telephone (202) 362-2800

PA-NER-832

AAI #86-41

USING FOOD AID FOR POLICY  
REFORM: THE MAURITANIAN  
EXPERIENCE

APAP Staff Paper No. 6

Authors: Dr. Jennifer Bremer  
Mr. Steven Block

September 1986

Submitted to:

Dr. Phillip Church  
Agency for International Development  
S&T/Agr, SA-18  
Room 403  
1601 No. Kent Street (Rosslyn Plaza)  
Rosslyn, VA 22209

## TABLE OF CONTENTS

	Page
Abstract	i
Table of Contents	ii
Foreword	iii
Summary and Lessons Learned from the Mauritanian Experience	
I. Issues in Food Aid to Mauritania	
a. Agriculture and the Food System in Mauritania	
b. Issues Facing the Government of Mauritania	
II. The Price Issue	
a. Food Aid for Policy Reform in Mauritania	
Size, Pace, and Composition of Annual Price Adjustments	
Farmers' Response to Price	
The Effect of Price Increases on Consumers	
b. The Impact of Changing Conditions on the Reform Program	
III. Non-Price Issues in Food Assistance Policy	
a. Targeting Poor Consumers	
b. Regulating the Grain Market	
ANNEXES	
A. Referenced Reports on Food Policy and Agriculture in Mauritania	
B. Selected Data on the Mauritanian Food Economy	

## FOREWORD

This publication is one of a series of staff papers that are part of the continuing effort of the Agricultural Policy Analysis Project (APAP), sponsored by the Office of Agriculture in AID's Bureau of Science and Technology, to disseminate the experience it has been accumulating in the area of agricultural policy analysis. Through interactions with policy makers, country analysts and AID missions in Africa, Latin America and the Caribbean, the Near East and Asia, APAP has identified and concentrated its technical resources on the following themes:

- Developing agendas for an informed mission-host country dialogue on economic policies constraining progress in agriculture.
- Defining food aid strategies and programs that foster and support economic policy reform measures.
- Identifying input and output price reform programs that stimulate agricultural production and productivity.
- Fostering private sector participation in input supply and product marketing and redefining the role of parastatal institutions.
- Developing the indigenous capacity of host-country institutions to provide the information needed to analyze, formulate, and implement policies conducive to agricultural development.

This paper summarizes the results of APAP assistance to food policy reform in Mauritania. Four APAP teams were fielded during 1984 and 1985 to assist AID and the Government of Mauritania in using food aid programming to promote improved incentives for farmers and greater food security. This experience demonstrates that emergency food aid can be used to accelerate long-term improvements in the agricultural sector.

We hope this and other APAP Staff Papers in the series will provide useful information and analysis to all those involved in the continuing agricultural policy dialogue between AID and host-country governments. We welcome comments, criticism, questions, and suggestions from our readers.

USING FOOD AID FOR POLICY REFORM:  
THE MAURITANIAN EXPERIENCE

ABSTRACT

Since 1982, AID has been using food aid to assist the Government of Mauritania (GIRM) and AID in improving agricultural policies during the multi-year drought crisis in the Sahel. This program demonstrates how food aid can be used to promote long-term progress in a food deficit situation, particularly where multi-year agreements are possible (as in PL-480 206 programs). Initial assistance was directed to bringing the government's grain sale price to import parity levels to establish appropriate signals for farmers and consumers. As this goal was reached toward the end of the first three-year program, the policy focus shifted to replacing free food with self-targeted commodities and identifying a series of reforms to minimize the negative impact of food aid on the local market, to use food aid more effectively to stabilize prices and availabilities, and to promote agricultural recovery. The experience underscores the need for food aid policy analysts to look beyond prices to consider the policy impacts of the total food aid quantities and the delivery mechanisms used.

## Summary and Lessons Learned from the Mauritania Experience

Since 1982, USAID/Nouakchott and the Government of Mauritania have been collaborating in an innovative effort to use food aid to promote food policy reform, taking advantage of special provisions in the food aid legislation making multi-year commitments of emergency aid available to countries with a serious food deficit that are undertaking policy reform (PL-480 Section 206). Mauritania's first 206 program was initiated in 1982 for the 1983-86 period. Design of a second program for the 1986-1989 period is underway at this writing. APAP has fielded four teams to support the design, implementation, and evaluation of these programs.

Between the design of the two programs, changes in the policy environment and food sector status led to an evolution in the reform agenda. The agenda in the first period focused on bringing the sale price for food aid commodities up to import parity, that is the approximate cost of commercial imports from the cheapest source. This agenda raised issues related to the magnitude of change needed to reach this goal, the impact on consumers, and probable producer response to the reform. As the price approached import parity, the agenda shifted to ways to improve program targeting and to a reexamination of the relationship between government distribution of food aid and the functioning of rural food-grain markets.

APAP experience in Mauritania suggests several lessons for the design and implementation of food aid policy interventions:

- a. Policy reforms can be implemented even in periods of economic difficulty, particularly if donors are able to help the government minimize short-term disruption and protect low-income consumers.
- b. A reform program implemented over a multi-year period must be reexamined and updated periodically to keep abreast of changing conditions in the world economy, as well as local developments.

- c. Where prices are out of line with world levels, price policy often stands at the head of the reform agenda, but, as prices are brought into line, other policies and non-policy measures become increasingly important to assuring adequate production incentives.
- d. Food aid, policy reform, and disaster relief can be integrated in a way that promotes both short-term recovery and long-term development, but doing so requires careful attention to local market conditions.
- e. The timing and delivery mechanisms for food aid and the total quantity provided have at least as great an impact on local market conditions as the price at which donor-supplied food is made available to local consumers.

## I. Issues in Food Aid to Mauritania

### a. Agriculture and the Food System in Mauritania

Mauritanian agriculture has been crippled in recent years by repeated droughts, with low and variable rainfall. Throughout the 1972-1983 period, rainfall remained below the 50-year average for the region; in two out of three years it was below 350 mm, considered the minimum for rainfed cultivation in Mauritania. Crop production, which had increased throughout the 1960s to reach roughly 90,000 MT, dropped to 40,000 MT after the 1972 drought and fell to an estimated 10,000-15,000 MT after the second drought in the early 1980s. (See Annex Tables 2 and 3.)

The drought has precipitated a crisis in the agricultural sector that gravely complicates food policy-making. Between 1969 and 1973 the total amount of cultivated land fell by over 30 percent (APAP, 9/84). This decline continued throughout the late 1970s and early 1980s, further aggravated by farmers' flight from drought-hit areas. The cultivated area in Mauritania has always fluctuated widely with weather conditions, but the severe nature of the current crisis casts doubt on whether dryland production will recover to pre-drought levels in terms of area or total production. Policy-makers must make critical decisions affecting the long-term development of the agricultural sector without knowing whether the current decline is permanent.

Although Mauritania once exported sufficient livestock products to import the grain it needed, drought has left the country with a structural food deficit among the largest in the world: under almost any conceivable scenario, APAP estimates indicate the country will be unable to meet its needs through production and commercial imports for at least the next twenty years, and must rely on food aid to fill the gap. (See Annex Table 4.)

Millet, sorghum, maize, and cowpeas are the basis of traditional crop production. Millet is the dominant crop in the rainfed areas, while sorghum, maize, and cowpeas are produced in the recessional areas fed by seasonal floods. Statistics on traditional production have never been collected systematically and estimates of yield, area, and production vary widely. For example, estimates of total grain production in 1977 ranged from 21,600 to 54,000 tons (DAI/RTI, 1983). The estimated area under rainfed cultivation varies from 20,000 hectares in a poor year to over 200,000 hectares in a good year.

Food crop yields are low and highly variable from year to year. Purchased inputs such as fertilizers and pesticides are not commonly used, and indeed are not generally available outside of the tightly controlled irrigated rice perimeters, which comprise only 3 percent of cultivated land.

In addition to its effects on crop production, the drought has devastated Mauritanian livestock production. The traditional mainspring of the agricultural sector, and indeed the national economy as well, livestock accounted for 80 percent of total agricultural production by value during the 1960s and was a major source of export earnings.

The effects of the drought have been especially damaging to the nomadic sector, the basis of Mauritanian livestock production. Many nomads were forced by the drought to migrate to urban centers, or to temporary encampments with access to food aid, while others shifted their grazing patterns toward the south. Increased grazing in agricultural areas along the Senegal River (the southern border of the country) exacerbated conflicts with rainfed production. Here, too, the long-term impact is unclear, since some herders may abandon livestock production permanently, or shift their operation out of Mauritania.

b. Issues Facing the Government of Mauritania

Since the drought of the early 1970s, Mauritania has been forced to rely on massive inflows of food aid. This situation continues at this writing, despite an 1985/86 harvest roughly four times the 1984/85 level. (See Annex Tables 3 and 5.) Against an estimated requirement of 270,000 tons, Mauritania produced only 15,000 tons in 1983/84 and 20,000 tons in 1984/85 and was able to import commercially only an additional 80,000 tons of rice, as foreign exchange earnings from agriculture and iron ore collapsed (the latter due to a sudden decline in ore prices).

Reliance on food aid has itself become a serious problem for Mauritania, both politically and economically. Food aid supplied 63 percent of the nation's grain need in 1983/84, a level that, if continued, clearly carries the danger of competition with domestic production. Without very careful management, food aid at this volume reduces the incentive to return to the land, encourage taste shifts to imported grains, and lower farm-gate prices.

This paper focuses on the difficult choices confronting the Government of Mauritania (the GIRM) in the 1984-85 period, as it attempted to guide the country into recovery from the severe drought of the early 1980s. During this period, the country faced a particularly intractable form of the "food price dilemma," the conflict between high prices for farmers and low prices for consumers. The drought sharpened the inherent conflict between producer and consumer interests: urban consumers, nomads, and the farmers themselves had even fewer resources than usual with which to purchase food, which had grown more expensive as subsidies were phased out and the effects of the drought were felt on the market.

Despite the continuing drought and concern that increased malnutrition if not outright starvation might result from further increases, the government had continued to raise prices to encourage production, with active support from the donors. The nature of farmer response to more favorable prices remained unclear, given the drought's disruption of production systems and the subsequent collapse of normal marketing channels as entire villages moved to urban areas. The government had also greatly expanded free food distributions during the drought years, but a continuation of large scale free distribution would carry the risk of undercutting agricultural recovery.

The donors and the GIRM thus faced three food aid issues during the 1984-85 period:

- How much grain should be sold and how much given away;
- At what price grain should be sold; and
- How to structure the food aid activities to promote as rapid a recovery in agriculture as possible.

Mauritania's eligibility for the U.S. 206 program created an opportunity for AID to structure food aid to address all three of these complex issues. Under Section 206 of PL-480 Title II, a multi-year commitment of food aid can be made to chronically food-deficit countries in exchange for specific policy reforms, with counterpart funds generated by food sale going to support mutually agreed-upon development activities. Although most countries are not eligible for this type of programming, the Mauritanian experience sheds light on several issues of concern in any multi-year resource commitment for policy reform.

## II. The Price Issue

### a. Food Aid for Policy Reform in Mauritania

In cooperation with the GIRM and other donors, AID had begun a three-year program in 1983 using food aid resources to promote policy reform. The stated purposes of the first program were: 1) to increase domestic marketed food production; and 2) to strengthen the food pricing, marketing, and distribution system. The program's broad objective was to increase Mauritania's food security by supporting both appropriate policy reforms and investments in traditional and irrigated production.

Grain pricing took the highest priority among the policy issues addressed in the first program. Price policy reform aimed towards increasing domestic cereal prices to their import parity levels. This move was intended to stimulate production of domestic cereals and to improve the efficiency of resource allocations in the Mauritanian economy.

The GIRM and the U.S. agreed to raise domestic retail prices gradually to reach import parity levels by 1987 (i.e., a domestic price equivalent to the price at which grain could be imported commercially). Indeed, some movement had already been made in this direction before the program began, with small increases in the prices of sorghum and wheat. By 1984, the consumer prices of wheat and imported sorghum had been raised 75 percent and 40 percent respectively, but were still well below import parity levels (see below).

The issues surrounding grain price policy fell into three broad categories:

1. the nature of annual price adjustments for wheat and sorghum;
2. farmers' response to changes in crop prices; and

3. the effect on consumers of increased grain prices.

### Size, Pace, and Composition of Annual Price Adjustments

The way in which annual price adjustments are made critically influence the political feasibility of bringing grain prices to import parity levels. The donors and the GIRM agreed that the entire policy of reaching and maintaining parity pricing would be threatened by the political repercussions of too large or too rapid an increase in consumer prices.

The steady but gradual pace adopted in the early phase of the reform appeared to be paying off. Analysts team asked to formulate reform benchmarks for the third year of the initial 206 program supported continuation of this strategy (APAP, 9/84). They proposed a UM 2\* increase (US\$.03 at the exchange rate prevailing in late 1984) in the price of wheat for the following year, from UM 15 (\$0.23) to UM 17 (\$0.26) in Nouakchott), with no change in the one-ougiya discount for consumers in areas outside the capital (intended to serve as a disincentive to urban migration, though an independent sector assessment found no evidence of success in that regard; DAI/RTI, 1983). At this time, the estimated import parity price for wheat (cif Nouakchott plus internal handling cost) was US\$ .34.

The analysts also suggested a freeze on imported sorghum prices, then set at UM 15/kg in the capital and UM 14/kg elsewhere. Mauritanian wheat imports originate primarily in Europe, while sorghum comes from the U.S. Although Mauritania has traditionally imported wheat, it has never imported sorghum

from outside of Africa, and indeed the varieties produced in the U.S. are viewed as unpalatable. Nonetheless, the greater shipping costs for U.S. sorghum make the import parity price higher than that for wheat. Demand for American sorghum at this price would be very low, and depending on the availability of wheat and other alternatives, could be nil. Consequently, it made little sense to raise U.S. sorghum to full parity. In addition to reflecting actual market conditions, a lower price for sorghum permits imported sorghum to serve as a self-targeted commodity (i.e., a food commodity that poor consumers can afford, and other consumers do not want).

#### Farmers' Response to Price

The fundamental motivation for raising grain prices to import parity levels is the expectation that farmers will increase both their production and their marketed surplus in response to higher farmgate prices. Yet the many environmental and non-price factors that constrain productivity in Mauritania limit the farmers' production response to price changes.

This issue is clearly central to agricultural price policy: if farmers cannot or will not respond to increased prices by raising production and grain sales, the argument for raising prices is substantially weakened (but not eliminated -- prices remain one of the few feasible methods for rationing available supplies among consumers).

Important though this question is for Mauritanian food policy, policy-makers do not have the luxury of waiting for formal analysis to give them an answer. The data that would permit a rigorous measurement of farmer price-responsiveness simply do not exist and, realistically, will not exist for several years. Decisions must therefore be made on the basis of informed judgments and economic reasoning.

APAP assisted AID and the GIRM to assess the limited information available on this issue, through a review of available data on the technical potential for increased output and farmer grain marketing behavior and discussions with professionals working in Mauritanian agriculture. The team concluded that in the short term, and in perhaps the medium term as well, Mauritanian grain production would not be particularly sensitive to prices.

Several factors combined to suggest that farmer's response to price incentives (i.e., supply elasticity) would be low in Mauritania. First, the rainfall level, not farmer decision-making, is the greatest determinant of production in Mauritania. Second, most farmers do not have access to fertilizer or other improved inputs that would enable them to increase production, nor are reliable technologies for the rainfed areas available. Finally, many observers question whether the typical farmer is interested in generating a surplus for sale. Agricultural professionals consulted in Mauritania argued that many farmers were interested only in producing enough grain to satisfy their own family consumption needs and restore on-farm storage levels, and thus would not respond to market incentives in any case.

Recent market performance tends to support this conclusion. Throughout the drought, price levels on the market for local varieties of sorghum have remained strong. APAP analysis of the profitability of domestic sorghum (preferred varieties such as taghalit) found it to be highly profitable. The fact that production of these varieties is stagnant suggests that non-price constraints may be limiting supply. Farmers may already be producing as much taghalit as they can, given current climatological conditions and the technologies available to them. If this is the case, higher prices would not yield a strong short-run production response to balance the negative impact on consumers.

In Mauritania, the argument in favor of price incentives rests on long-term considerations. High prices are needed to motivate farmers to take the risks associated with using modern inputs and to view food crops as a source of income. Equally important, high prices are needed to encourage traders to expand their purchase of local grain, strengthening farm level markets, and to fuel an expansion in the demand for yield-increasing inputs, so that traders have an incentive to make such inputs available to farmers.

Another issue clouding the choice of an appropriate grain price is Mauritania's foreign exchange situation. In recent years, imported grain has provided nearly all of the grain consumed in the country. Thus, domestic food prices are closely tied to changes in exchange rates.

But the reverse is also true: grain imports to Mauritania, including food aid, are large relative to the total import budget. Therefore the demand for foreign exchange and the exchange rate itself are not independent of changes in food prices on local and international markets. By lowering domestic food prices and lowering the demand for foreign exchange to finance commercial imports, food aid indirectly duplicates many of the effects of an over-valued currency.

In-country observers believe that the ouguiya is still somewhat overvalued despite recent devaluations (the extent of its overvaluation is not clear, even without taking into consideration the effect of food aid). Thus, real import parity prices are higher than those calculated at official exchange rates, although the differential cannot be precisely measured. Depending on the future rate of inflation in Mauritania relative to grain exporters, further devaluations and/or increases in the local grain price will be required to prevent the price from moving out of line with import parity. (At the same time,

increases in grain prices will contribute to inflation, thus fueling the cycle of devaluation.)

### The Effect of Price Increases on Consumers

As in the case of price effects on producers, the likely effects of price changes on Mauritanian consumers must largely be derived from basic economic reasoning, given the absence of data on consumer sensitivity to price. In general, one would expect two types of effects on consumers from an increase in grain prices: a shift toward relatively cheaper food commodities and a reduction in the total amount of food consumed. This latter effect is particularly troubling given the current situation in Mauritania, where roughly two-thirds of the population was classified in 1985 as indigent as the result of the drought. Even at prices below import parity these low-income consumers are barely able to purchase sufficient amounts of food. Given the fact that a large proportion of low-income families' income is spent on grain, the negative "income effect" associated with increased food prices could be quite severe.

The GIRM has acted to relieve this problem by distributing large quantities of grain for free. In 1984, APAP estimated that the indigent population received roughly 24 percent of grain consumed free of charge (with 31 percent supplied from own production and 45 percent purchased). The team estimated that at import parity prices free food would have to increase to 47 percent to maintain 1984 consumption levels (APAP, 9/84).

#### c. The Impact of Changing Conditions on the Reform Program

The gradual move to import parity prices envisioned in the initial AID/GIRM agreement was overtaken by events in late 1984 and early 1985. Continued deterioration in the economy contributed to a change of government in November 1984. The new

government, faced with a foreign exchange shortfall of crisis proportions, accepted IMF recommendations to raise the price of grain immediately by roughly 50 percent (to UM 22 in the urban areas) and to devalue the currency. Concern over the impact of the price rise on a population already hard-hit by the drought motivated the new government to increase free food distributions dramatically, with the consent of the food donor community. Free food rose as a percentage of total distributions to at least 60 percent, compared to around 30 percent in the previous year and 10 percent in 1982/83. As a result, the average price paid by consumers for grain received from the government was not affected by the price rise (and indeed declined slightly).

As the GIRM and AID turned to designing a second 206 program, both parties were seriously concerned with the sustainability of the food aid program in its current form and with the impact on national grain markets. First, food sale proceeds had declined by one-third relative to the previous year due to the drop in sales volumes that accompanied higher prices and expanded free distributions. This loss of revenue called into question the GIRM's ability to finance internal distribution. Second, continued free distribution at the 1984/85 rate amounted to a consumer income subsidy of unsustainable magnitude and threatened to undercut necessary adjustments and resumption of productive activities throughout the economy. Third, initial indications of reasonably good rains for the upcoming harvest raised concern over the possible disincentive effects of food aid -- sold or free -- and the need to insure against disruption of the grain market during the critical recovery period.

IMF negotiations and falling world grain prices, moreover, had effectively removed price reform from the AID-GIRM dialogue agenda. The IMF program accelerated price reform to the point where the GIRM sale price was close to the world price, with the gap scheduled to close completely within a year. The evolving

policy environment thus caused the price issue to recede in importance, and moved non-price issues to the forefront, particularly in relation to the level of grain flowing through government channels and the implementation of government grain programs.

### III. Non-Price Issues in Food Assistance Policy

As AID and the GIRM approached design of a follow-on to the first reform program, they faced two closely related issues in grain distribution and marketing:

- a. The need to find an alternative policy to free food that would ensure food security for low-income consumers faced with grain prices increases; and
- b. The need to create an environment in which normal private sector marketing could be resumed as smoothly as possible as production picked up.

Inevitably, considerable uncertainty surrounded discussion of these issues. As of late 1985, preliminary indications were that rainfall and river flow in the Senegal River area would be much higher than in previous years, sufficient for a reasonably good grain crop and for a limited recovery of livestock production. But was this a temporary respite or the long-awaited end of the drought? When and to what extent would consumer incomes return to pre-drought levels? How severely had the drought disrupted national agricultural capacity?

All of these questions remained unanswered. The income and consumption survey scheduled for completion during the first 206 program remained in the planning stage and existing reporting systems for consumption and production were nonexistent or wholly unreliable. Whatever the uncertainties, both donors and GIRM policy-makers are committed to proceeding with the reform, given

the urgent need for a grain marketing system that gives as much stimulus as possible to agricultural recovery.

a. Targeting Poor Consumers

A reduction in free distributions was the first imperative, for several reasons. First, free distributions, which had begun as a response to a life-threatening crisis, showed signs of evolving into an extreme form of consumer subsidies as eligibility was extended to 70 percent of the population. No country -- certainly not Mauritania -- could long afford such an extensive welfare program.

Second, the GIRM could not afford the program even in the short run. The GIRM agency responsible for the food program (the Food Security Commission, or CSA) depends on food sales to finance the high cost of transporting food from the port to the rural areas. Although CSA budget management is highly informal, CSA financial managers expressed concern that the expansion in free distribution was depleting the funds available for food logistics more rapidly than new sales or other funds could replenish them, suggesting a fiscal crisis in the offing.

At the same time, both donors and CSA leadership recognized that it would be difficult to curtail free distributions sharply in the face of scheduled price rises and uncertainty regarding income levels in the rural areas. Recommended remedies to this problem involved two changes in strategy:

- i. a shift in the 206 commodity mix to increase the quantity of sorghum and reduce wheat, providing more of the commodity that is least preferred and most likely to be consumed by poor consumers in the southern region; and
- ii. a reduction in the price of sorghum to bring it within reach of poor consumers, to reduce the political impact of continuing increases in wheat prices, and to

discourage consumers from shifting to wheat from coarse grains.

As Mauritanian consumption patterns shift in response to the changes in food availability, wheat is emerging as the most serious competitor to local grain. Although red sorghum, the other grain supplied by U.S. food aid, is theoretically a closer substitute for locally produced sorghum and millet, both Mauritanian observers and market conditions support the view that local consumers are shifting to wheat products, not to red sorghum, as the absolute and relative price of local grains rises. The danger existed that low wheat prices would encourage a long-term shift away from local grains toward a grain that must be imported. U.S. red sorghum, by contrast, is widely regarded as an inferior grain in Mauritania and indeed commands a price on the informal resale market well below that of wheat (UM 17 versus UM 22 in one rural market, for example) and much below that of local sorghum varieties (with prices up to UM 60). A further drop in the relative price of red sorghum seemed unlikely to swing consumers away from local grains.

b. Regulating the Grain Market

The resumption of agricultural production after a crisis poses a number of difficult issues for food aid managers and agricultural policy-makers:

- i. How to promote orderly marketing, with fair prices to farmers and maximum flow to the urban areas;
- ii. How to manage food aid flows so that adequate supplies of food are available in the rural area but local marketing is not disrupted; and
- iii. How to integrate official food pricing policy (a single, year-round price nationwide) with the complexities of the market.

The GIRM leadership was naturally concerned that the grain market should operate smoothly during the upcoming harvest, both to ensure a fair market for farmers and to transfer the surplus over rural consumption, if any, to urban consumers. To achieve this outcome, the CSA proposed to undertake a buying campaign in the period immediately following harvest, to be financed with proceeds from sale of donor-supplied commodities.

This approach was believed by food policy analysts to be inconsistent with the aims of the reform program for several reasons:

- i. The CSA's lack of funds and shortage of transport equipment suggested that the program could not be carried out effectively, and could be more disruptive than supportive of marketing activities.
- ii. An active CSA buying campaign would discourage local traders from resuming activities and therefore retard the development of a private grain trade.
- iii. Given the government's dominant role in the grain market via its management of donor-supplied commodities, further intervention on a nation-wide scale would be neither necessary for smooth market functioning nor desirable.

Nonetheless, the GIRM was clearly justified in doubting the ability of the existing private sector to ensure market access to farmers in the most remote regions. Given this situation, a government buying campaign might be appropriate in such areas, if there were a surplus over local needs and storage capacity, and if funds were available to finance orderly CSA purchase.

APAP analysts also proposed that greater use be made of the food aid itself to regulate the market. Given the importance of food aid in the total grain supply, the timing and quantity of food aid releases are likely to have as much impact on local market conditions as the price at which the donor food is sold. Indeed, as long as donor-supplied food sells below the price of

local grain, it is the quantity sold and not the price that determines the residual demand for local grain and therefore has the greatest impact on the latter's price.

The timing of donor food sales is particularly critical to ensuring local markets operate smoothly. The release of food aid during the harvest period can seriously depress farmer prices, discouraging both immediate sales and next year's production decisions. Conversely, release of food aid several months after the harvest, when local supplies have been depleted, would have little immediate impact on producers, regardless of the price. (Price remains important during this period, of course, because of its impact on future farmer production decisions, consumer decisions, and the willingness and ability of traders to store grain for later sale).

This reasoning suggests that CSA sales should be suspended for several months following each harvest, to create optimum conditions for farmer sales, and that free food distributions should be restricted primarily to the period of greatest scarcity, rather than spread evenly over the year. Free distributions during the post-harvest period might instead be limited to special high-risk groups, such as women-headed households.\*

The GIRM could also use local prices as a guide for the release of food aid (for sale or free distribution). Local price

information is regularly gathered in each of the CSA's 18 sales centers, but at present little use is made of the data. By turning sales "on" whenever the local price rose above a specified level and "off" when the price fell below it, the CSA could regulate local markets much more effectively than at present.

Moreover, a price-based system would permit the GIRM to integrate its uniform, year-round sales price more effectively with the market's natural pattern. The "trigger" price at which CSA sales begin need not be a single nation-wide, year-round level, but could instead be set to reflect differing market conditions over time and across regions, permitting traders a profit level sufficient to transport and store grain but intervening to lower the price when necessary. Under this system, the local market price that would trigger CSA sales would be higher in regions distant from local production and would rise over the inter-harvest period. CSA sales would always be made at the same price, but would be turned "on" and "off" according to local market conditions.

This improvement would be less complicated to implement than it might seem, since in most areas CSA sales would be turned "on" a few months after harvest and remain so until the price fell following the next harvest. A somewhat similar system is currently used in Bangladesh. Official sales at a below-market price are triggered when the open market price passes above a predetermined level. An APAP evaluation of U.S. Title III assistance in Bangladesh found this system, financed in part by U.S. food aid, to function effectively overall.

Achievement of food pricing goals, in other words, does not signal the end of food aid's usefulness as a policy tool. On the contrary, it opens the way for a more sophisticated approach that applies food aid and other policy tools in support of a food marketing system that will promote the most rapid recovery

possible from agricultural crisis. At this writing, it is still too early to determine the course that food policy reform will take during the recovery period (if rainfall indeed recovers), much less what impact the reforms will have on Mauritania's agricultural sector.

The overall lesson from the Mauritanian experience is that food aid issues cannot be isolated from policies in the total food system. AID food aid managers must look beyond food aid pricing to consider how food aid quantities will affect prices in related agricultural markets. They must critically examine how food aid programming affects critical decisions on the part of the farmer and the consumer, as well as the trader who forms the all-important link between the two.

ANNEX A

REFERENCED REPORTS ON FOOD AND  
AGRICULTURE IN MAURITANIA

- APAP, September 1984. J. Anthony Bottomley and Linda Markey. "An Analysis of the Effects of an Increase in Grain Prices: Mauritania." A report submitted to USAID/Nouakchott by the Agricultural Policy Analysis Project, Washington, DC.
- APAP, December 1984. "Evaluation Report: Mauritania PL-480 Title II, Section 206 Program." Don McClelland, L. Gray Cowan, Linda Markey, and Carol Stengel. A report submitted to USAID/Nouakchott with the assistance of the Agricultural Policy Analysis Project, Washington, DC.
- APAP, October 1985. Axel Magnuson, Jennifer Bremer, Phillip Stefan, and Rex Wingard. "Draft Program Paper: PL-480 Section 206." A report submitted to USAID/Nouakchott by the Agricultural Policy Analysis Project, Washington, DC.
- APAP, November 1985. David Sahn, Phillip Parker, and John Zins. "Preliminary Design of the Mauritania Household Income, Consumption and Expenditure Survey." A report submitted to USAID/Nouakchott by the Agricultural Policy Analysis Project, Washington, DC.
- DAI/RTI, January 1983. "Food and Agriculture Sector Assessment." A report submitted to USAID/Nouakchott by Development Alternatives, Inc. (Washington, DC) in cooperation with the Research Triangle Institute.

ANNEX B

SELECTED DATA ON THE MAURITANIAN FOOD ECONOMY

1. Map of Mauritania Showing USAID Food Distribution Centers (Source: APAP, December 1984).
2. Local Production of Grains, Mauritania (Source: APAP, September 1984).
3. Total Grain Supply by Source, Mauritania, 1982/83 and 1983/84 (Source: APAP, September 1984).
4. Projected Food Balance Sheet for Mauritania (Source: APAP, November 1985; team estimates)
5. Sales and Free Distributions, USAID and WFP Centers (Source: APAP, November 1985; team estimates from unpublished CSA data)



Table 2

## Local Production of Grains, Mauritania

Year	Millet-sorghum	Annual targeted grain requirement for the population <sup>a</sup>	Percent of targeted grain requirements for the population
	-thousands of MT-	-thousands of MT-	--percent--
1977/78	19.9	160.0	12.4
1978/79	48.7	165.0	29.5
1979/80	21.2	180.0	11.8
1980/81	36.6	195.0	18.8
1981/82	68.9	226.0	30.5
1982/83	20.0	232.9	8.6
1983/84	15.0	251.1	6.0
Average	32.9	206.0	16.0

a. IMF estimates for 1977/78-1981/82, 1982/83 and 1983/84 figures are based on extrapolations of figures for the previous years.

Source: 1976/77 to 1981/82 - International Monetary Fund 1982/83 and 1983/84 - Comisserrat for Food Security (CSA).

Table 3

Total Grain Supply by Source,  
Mauritania, 1982/83 and 1983/84

Source	1982/83		1983/84	
	MT	% of total	MT	% of total
Local production <sup>a</sup>	20.0	10.9	15.0	5.9
Commercial imports <sup>b</sup>	80.0	43.4	78.0	30.7
Food aid imports <sup>c</sup>	84.1	45.7	160.9	63.4
Free distribution	10.6	5.8	48.3	19.0
Market sales	73.5	39.9	112.6	44.3
Total	184.1	100.0	253.9	100.0

Note: The fiscal year runs from November through October.  
a. Production of millet, sorghum and rice.  
b. Composed primarily of rice imports by SONIMEX.  
c. Donations are primarily of wheat and sorghum.  
Sources: Production - USAID/Nouakchott; commercial purchases - SONIMEX; donations - USAID/Nouakchott

Projected food balance sheet for Mauritania  
 Grain products only  
 Case: base, low consumption

(in MT)

Year	0	1	2	3	4	5	6	7	8	9	10	
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	
<b>NEEDS</b>												
Population	.027	1735	1782	1830	1879	1930	1982	2036	2091	2147	2205	2265
Annual cereal cons. (MT)	155	268925	276186	283643	291301	299166	307244	315540	324059	332809	341795	351023
<b>PRODUCTION</b>												
Total dualo land cultivated		40000	45000	50000	55000	60000	60000	60000	60000	60000	60000	60000
Total other decrue	.10	8000	8800	9680	10648	11713	12884	14172	15590	17149	18864	20750
Dualo area in sorghum		32000	36000	40000	44000	48000	48000	48000	48000	48000	48000	48000
Sorghum yield	.07	430	460	492	527	564	603	645	690	739	791	846
Production		13760	16564	19692	23178	27055	28949	30975	33143	35463	37946	40602
Other decrue in sorghum		5600	6160	6776	7454	8199	9019	9921	10913	12004	13205	14525
Sorghum yield	.05	400	420	441	463	486	511	536	563	591	621	652
Production		2240	2587	2988	3451	3986	4604	5318	6142	7094	8194	9464
Dieri land in grain		20000	20000	20000	20000	20000	20000	20000	20000	20000	20000	20000
Grain yield	.00	300	300	300	300	300	300	300	300	300	300	300
Production		6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
Pluviale land in grain		30000	40000	50000	60000	70000	70000	70000	70000	70000	70000	70000
Grain yield	.00	350	350	350	350	350	350	350	350	350	350	350
Production		10500	14000	17500	21000	24500	24500	24500	24500	24500	24500	24500
Irrigated land (cropped ha.)	.10	4000	4400	4840	5324	5856	6442	7086	7795	8574	9432	10375
Irrig. land in rice	.95		.80	.50	.20	.00	.00	.00	.00	.00	.00	.00
Irrigated land in rice		3800	3520	2420	1065	0	0	0	0	0	0	0
Rice yield	.05	2500	2625	2756	2894	3039	3191	3350	3518	3694	3878	4072
Production		9500	9240	6670	3082	0	0	0	0	0	0	0
Irrigated land, other gr.		200	880	2420	4259	5856	6442	7086	7795	8574	9432	10375
Other grain yield	.07	5000	5350	5725	6125	6554	7013	7504	8029	8591	9192	9836
Production		1000	4708	13853	26089	38383	45176	53173	62584	73662	86700	102046
<b>TOTAL PRODUCTION</b>		43000	53099	66704	82799	99924	109229	119966	132370	146719	163339	182612
<b>DOMESTIC GRAIN BALANCE</b>		-225925	-223087	-216939	-208502	-199243	-198015	-195574	-191689	-186089	-178455	-168411
<b>INDOMESTIC SOURCES</b>												
Rice imports		80000	80000	80000	100000	120000	140000	160000	180000	180000	180000	180000
Commercial wheat imports		80000	80000	80000	80000	80000	80000	80000	80000	80000	80000	80000
		0	0	0	20000	40000	60000	80000	100000	100000	100000	100000
<b>STRUCTURAL DEFICIT</b>		-145925	-143087	-136939	-108502	-79243	-58015	-35574	-11689	-6089	1545	11589

Assumptions:  
 1985 population (000)

1735

Table 5

Sales and Free Distributions  
 USAID and WFP Centers  
 January-June 1984 and 1985  
 (in tons)

	1984			1985		
	Sales	Free	Total	Sales	Free	Total
<b>USAID CENTERS</b>						
Wheat	8778	6648	15418	6939	10492	17431
Sorghum	1718	0	1718	496	0	496
Total grains	10488	6648	17136	7435	10492	17927
<b>WFP CENTERS</b>						
Wheat	4898	4564	9462	3462	7625	11087
Sorghum	1125	0	1125	283	0	283
Total grains	6023	4564	10587	3745	7625	11370
<b>TOTAL</b>						
Wheat	13668	11212	24880	10401	18117	28518
Sorghum	2843	0	2843	779	0	779
Total grains	16511	11212	27723	11180	18117	29297

## Percentages:

sorghum as % sales .17  
 sales as % of total dist. .60  
 % change relative to 1984

.07  
 .38

Wheat  
 Sorghum  
 Total grains

-.24 .62 .15  
 -.73 -.73  
 -.32 .62 .06

## Prices

Official sales price (rural avg.)  
 Effective average per kg. dist.

UM 11.00  
 UM 8.34

UM 18.80  
 UM 7.17

source: unpublished CSA data