

**Private and Public Sectors in Developing  
Country Grain Markets: Organization  
Issues and Options in Senegal**

by

**Mark D. Newman, P. Alassane Sow  
and Ousseynou NDoye**

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## **SPECIAL NOTE FOR ISRA-MSU REPRINTS**

In 1982 the faculty and staff of the Department of Agricultural Economics at Michigan State University (MSU) began the first phase of a planned 10 to 15 year project to collaborate with the Senegal Agricultural Research Institute (ISRA, Institut Sénégalais de Recherches Agricoles) in the reorganization and reorientation of its research programs. The Senegal Agricultural Research and Planning Project (Contract 685-0223-C-00-1064-00), has been financed by the U.S. Agency for International Development, Dakar, Senegal.

As part of this project MSU managed the Master's degree programs for 21 ISRA scientists at 10 U.S. universities in 10 different fields, including agricultural economics, agricultural engineering, soil science, animal science, rural sociology, biometrics and computer science. Ten MSU researchers, on long-term assignment with ISRA's Department of Production Systems Research (PSR, Département de Recherches sur les Systèmes de Production et le Transfert de Technologies en Milieu Rural) or with the Macro-Economic Analysis Bureau (BAME, Bureau d'Analyses Macro-Economiques) have undertaken research in collaboration with ISRA scientists on the distribution of agricultural inputs, cereals marketing, food security, farm-level production strategies and agricultural research and extension. MSU faculty have also advised junior ISRA scientists on research in the areas of animal traction, livestock systems and farmer groups.

Additional MSU faculty members from the Department of Agricultural Economics, Sociology, Animal Science and the College of Veterinary Medicine have served as short-term consultants and professional advisors to several ISRA research programs.

The project has organized several short-term, in-country training programs in farming systems research, agronomic research at the farm-level and field-level livestock research. Special training and assistance has also been provided to expand the use of micro-computers in agricultural research, to improve English language skills, and to establish a documentation and publications program for PSR Department and BAME researchers.

Research publications from this collaborative project have been available only in French. Consequently, their distribution has been limited principally to West Africa.

In order to make relevant information available to a broader international audience, MSU and ISRA agreed in 1986 to publish selected reports as joint ISRA-MSU International Development Paper Reprints. These reports provide data and insights on critical issues in agricultural development which are common throughout Africa and the Third World. Most of the reprints in this series have been professionally edited for clarity; maps, figures and tables have been redrawn according to a standard format. All reprints are available in both French and English. A list of available reprints is provided at the end of this report. Readers interested in topics covered in the reports are encouraged to submit comments directly to the respective authors, or to Dr. R. James Bingen, Associate Director, Senegal Agricultural Research and Planning Project, Department of Agricultural Economics, Michigan State University, East Lansing, MI 48824-1039.

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## **ABSTRACT**

Structural adjustment for many developing countries involves defining appropriate private and public sector roles in agricultural marketing. This paper uses survey data on the operation of Senegal's grain trade, prices, government regulations, and actual performance as the bases for discussion of issues and options for policy making.

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# PRIVATE AND PUBLIC SECTORS IN DEVELOPING COUNTRY GRAIN MARKETS: ORGANIZATION, ISSUES, AND OPTIONS IN SENEGAL

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## INTRODUCTION

At the bidding of the World Bank, International Monetary Fund, and others, the 1980s have become the decade of structural adjustment for many developing countries. One hallmark of the policy packages being advocated is increased reliance on the private sector to carry out agricultural marketing tasks, handled before independence by public and parastatal agencies (Berg Report and many others). Faced with high costs, considerable unreimbursed credit, and a variety of other factors, the West African nation of Senegal abolished its de facto national grain and oilseeds marketing board (ONCAD) in 1980 and embarked on an experiment involving both the development of a legal private grain trade and occasional forays into the grain market by a public agency--the Food Security Commissariat (CSA). This paper examines the marketing system that has developed, and policy issues and options raised by Senegal's experience.

Senegal, located between 12° and 16° north of the equator on the extreme west coast of Africa, is bordered by Mauritania, Mali, Guinea (Conakry), and Guinea-Bissau. This paper focuses on the Peanut Basin, which occupies the central portion of Senegal, ranging east from Dakar to Tambacounda, and north from the Gambia to Louga and the Sahel.

The Peanut Basin is a highly rural area with 50 percent of the country's 6.5 million population. Mean annual rainfall is highly variable, but increases from 14 inches in the north to 32 inches in the south. Rainfall is concentrated in the June to September period.

Traditionally, peanuts have been the cash crop, and millet and sorghum the key grain crops. Corn production has been increasing in the extreme southern portion of the region. Grain production is primarily for home consumption, with 5-20 percent of the crop marketed.

Senegal's grain marketing system includes channels for: commercial imports of rice, wheat, and grain sorghum; food aid shipments of the same commodities; and domestically produced millet, sorghum, corn, and rice.

In 1985, an estimated 51 percent of cereals needs were satisfied from local production, compared to 39 percent in 1984. Foreign exchange costs for food have risen as a result of (1) increased food imports due to drought and stagnant production and (2) increased per unit costs for imports including food, resulting from a strengthened U.S. dollar relative to the French franc (against which the FCFA is pegged). The current (February 1985) exchange rate is \$1 = 500 FCFA.

A "New Agricultural Policy" (NPA) announced in 1984 centers on increasing local grain production as a key element of strategy for increased food self-reliance. The NPA stresses the need for: "assured" markets for grain producers; "assured" supplies for consumers; and a less direct and less costly role for the public sector in grain markets (GOS, MDR, 1984).

It is the thesis of this paper that Senegal's experience with the development of a private sector system of assembly, wholesaling, and distribution for locally produced and imported grain can provide useful insights for policy design and implementation. Study procedures and empirical findings are given in sections 2 and 3. Discussed later are key issues and options for the definition of appropriate roles for both private and public sectors in developing country grain markets.

### **STUDY PROCEDURES**

This paper presents preliminary results of one of a set of studies directed at providing policy analysts and decision makers with a more sound basis for evaluating food and agricultural policy options (Newman, Crawford, and Faye).

Policy analysts are often called upon to provide rapid answers to questions on appropriate roles for public and private sectors; impacts of price and regulatory policies on incentives for producers, market intermediaries, and consumers, etc. Yet reliable data and information on the organization, operation, and performance of private and public sector marketing channels were often unavailable. Price data, where available, often reflected what policy makers wished the prices were rather than the prices at which transactions actually occurred. Thus, a research effort was begun.

Past literature and exploratory surveys indicate that in Senegal and a number of other West African countries, a large percentage of grain transactions take place in periodic markets (Van-Chi; Ndoye). In the absence of any recent or reliable data on periodic markets, grain flows, market participants, or actual prices, the study began with exploratory surveys and a census of periodic markets.

A sample of 40 primary assembly and distribution markets was selected and a census of grain market intermediaries (small assemblers and wholesalers) conducted in each market. Approximately 1,400 intermediaries were identified.

A stratified random sample of 312 intermediaries was selected and personal interviews conducted using a standard questionnaire. The results presented here are based on preliminary analysis of 167 responses. (Others are being tabulated and more detailed analysis will follow.) As a result, no attempt is made here to draw statistical inferences or generalize beyond those surveyed. Nonetheless, since past studies in Senegal have been limited to much smaller geographic coverage and smaller samples, the preliminary findings provide useful insights.

In addition to the surveys of market intermediaries discussed here, the research program on grain marketing upon which this paper is based includes: a follow-up survey of wholesaler marketing functions, costs and margins currently underway; a survey of producer marketing behavior and marketing information; and collection of producer price data for a variety of agricultural commodities. Data on public and parastatal marketing activities are being collected through personal interviews.

## **PRIVATE AND PUBLIC SECTORS IN SENEGAL'S GRAIN MARKETS**

### **The Rules of the Game**

Senegal's grain marketing system is essential to the pursuit of government objectives of increased food self-sufficiency, assured markets to agricultural producers, and assured food supplies to consumers. Regulations and their enforcement have a major impact on incentives for the system to function in accordance with policy objectives.

### **The Private Sector**

The rules governing assembly, transportation, and storage of grain, especially millet, have varied considerably since ONCAD was abolished. The first stage in an attempt to "assure" markets for food crops and provide incentives for their production is to specify who may participate in what marketing functions, when marketing transactions may take place, and under what conditions, prices, etc. This is true in many countries where state or parastatal agencies have traditionally been involved in marketing of cash crops. In four of the last six years, "official prices" were announced immediately before or during harvest, but the actual specification of legal participants

in the assembly and transportation of grain occurred in December or January (Sow and Newman).

In Senegal, merchants who handle quantities of grain larger than 200 kg (8 bushels) must be licensed. In addition to being licensed as traders, it is usually necessary to be licensed (agree) to handle a specific commodity on an annual basis (Sow and Newman). The list of traders licensed to handle millet has often been announced even later than the announcement of categories of legal participants in the grain trade. During the 1983/84 and 1984/85 marketing seasons, no lists of licensed traders have been issued. The crops were considered by Ministry of Commerce officials to be too small to warrant them. The administrative regulations (decrets) specifying that any licensed wholesale merchant could participate in the grain trade were signed in January 1984 and December 1984, respectively, even though harvested grain began to move into markets in September-October of both 1983 and 1984.

This situation obviously introduces considerable uncertainty for both private traders and producers. In the absence of annual regulations specifically permitting them to participate in the grain trade, traders must either subject themselves to risks of fines or seizure of commodities by conducting their business in quasi-legality. Or they must shift their activities to other sectors, leaving farmers without market outlets and foregoing themselves business opportunities.

### **The Public Sector, Parastatals, and Cooperatives**

The rules governing the role of public and parastatal entities and cooperatives in the marketing system have also been variable over time, and sometimes imprecise. When ONCAD was abolished, the public sector role in the assembly of local millet, sorghum, and corn was passed to the Food Security Commissariat (CSA). Until 1984, the CSA was called the Food Aid Commissariat (CAA), due to its role as an aid distribution agency.

The public sector role in the assembly of locally produced hulled rice was given to the Price Stabilization Board (CPSP) which also is responsible for commercial imports of rice and sorghum, and licensing of wheat imports. ONCAD's role vis-a-vis peanut assembly has gradually been shifted to the parastatal oil crushing firms. Rural development agencies have been given a role in corn assembly and a monopoly on producer-level assembly of paddy rice.

Cooperatives in Senegal have traditionally been state-directed organizations used to distribute production inputs, assemble cash crops, and recover debts. A 1983 reorganization of the cooperative system was aimed at broadening the scope of cooperative

activities and increasing the degree of producer autonomy in their management. In grain marketing, a portion of the government purchasing target through official channels was set aside for cooperatives during the 1984/85 crop year. A preferential official price was also established to encourage cooperatives to use their own capital to assemble grain. This met with little success due to the overall level of official prices, discussed below.

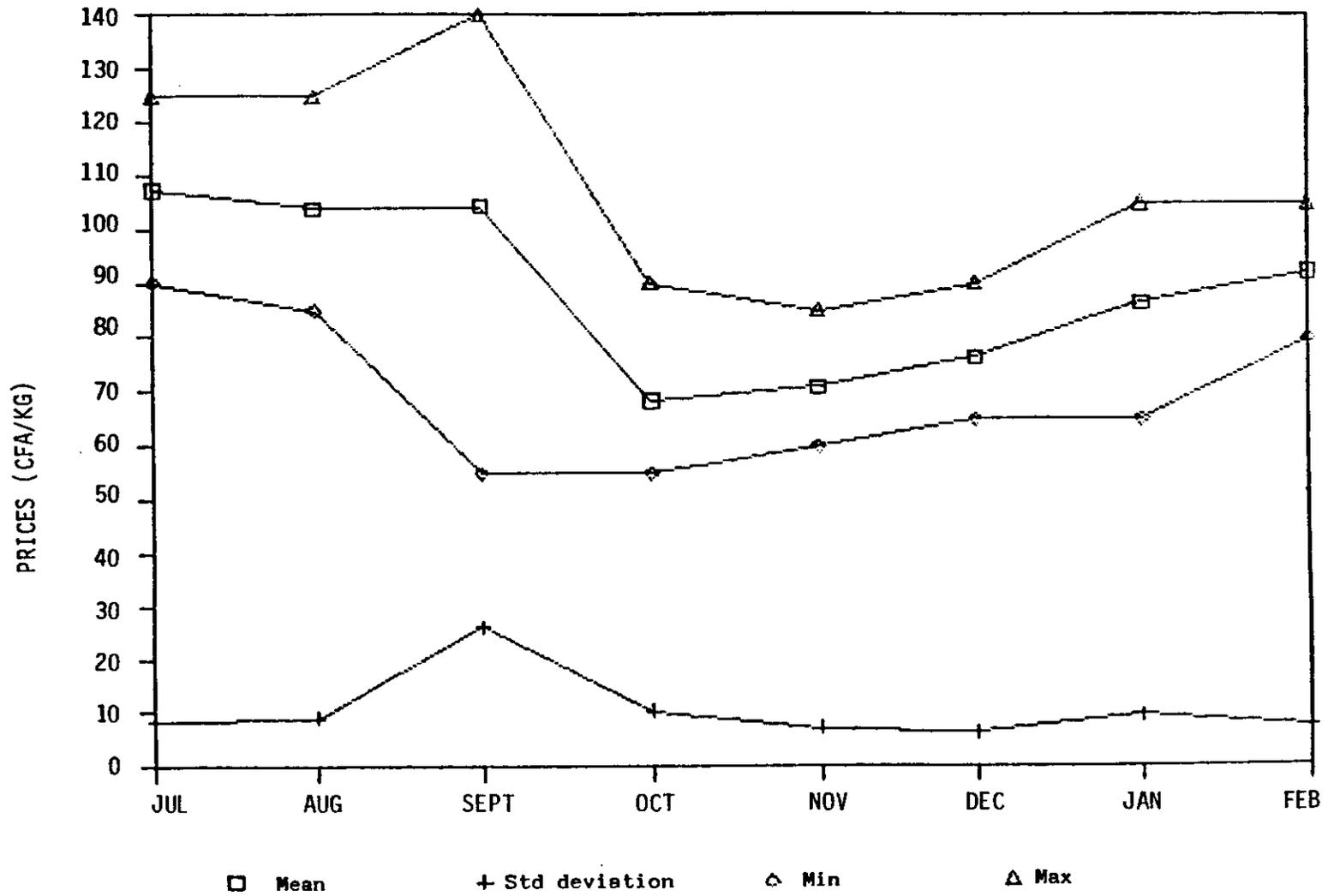
During the current marketing year, uncertainty has also influenced the role of public agencies in the assembly of grain. On October 8, 1984, the ministerial council announced that the official marketing season would begin on October 15. The official regulation specifying that the Food Security Commissariat (CSA) could purchase grain at the producer level was not signed until December 21. Thus, the legal basis for direct producer-level purchases by the CSA was unclear (since for 1983/84 the CSA was to purchase from private traders) and the legality of producer-level purchases by private traders was also unclear. Nonetheless, both groups proceeded to assemble grain, though at prices that often differed considerably.

### Prices

Prices are another area where regulatory uncertainty exists. As in many other countries, Senegal establishes "official" prices at the producer, wholesale, and retail level for locally produced grain. These include millet, sorghum, corn, and paddy rice. Official wholesale and retail prices are also set for imported cereals. For imported grain, government enforcement efforts make it clear that official prices are intended to fix prices to consumers and margins permitted to intermediaries. For locally produced grain, it is not clear whether producer prices are intended as a floor or a fixed price. During 1983/84, the official price was treated as a floor price, and when market prices were above official prices, the CSA simply withdrew from the market. During the 1984/85 season, there were reports of a number of cases of seizures by administrative authorities for grain traded at higher than official prices during the early months of the "official" marketing season.

This calls into question what government wants "official prices" to actually mean. As can be seen from Figure 1, according to survey data collected in 40 markets, mean producer-level prices for millet paid by private traders in the Peanut Basin stayed above the official price (55 francs CFA/kg until October 1984 and 60 francs CFA/kg after that date) for the entire July 1984–February 1985 period. The lowest observed price fell below the official price during the harvest period only in the areas of highest

Figure 1. Producer-Level Millet Prices in Senegal's Peanut Basin,  
July 1984-February 1985



Official price : 55 F CFA/kg through September, then 60 CFA/kg

SOURCE : Price surveys in 40 markets ISRA/BAME

production. Thus, while the official price may have functioned as a floor, it obviously did not act as a ceiling for actual prices at which cereals are exchanged.

In terms of presenting incentives to producers, this presents no problems, but imprecision as to the legal objective in fixing prices has resulted in other undesirable effects, in addition to the seizures mentioned above. Since legally permissible margins are established on the basis of official producer prices, private wholesalers maintain accounting systems based on official prices at wholesale and retail levels, even though no trades occur at those prices. This lets them appear to be in compliance with regulations and also trade grain. At best, this defeats the whole purpose of maintaining an accounting system. It also points out the usefulness of understanding some of the participants in the marketing system and the functions they perform in order to evaluate policy options.

### **How the Market Really Works**

#### **The Private Sector**

The private sector grain trade in Senegal's Peanut Basin begins with a system of assemblers who purchase small (less than 50 kg) and larger (50-100 kg) quantities at the village and periodic market level. Bagged grain (80-130 kg) is generally assembled by licensed and unlicensed wholesalers in periodic markets and handled in break-bulk to move it to major regional centers where it is consumed, stored, or redistributed to grain deficit areas. Some bulking of grain also takes place in villages.

Survey data indicate that despite the climate of regulatory uncertainty, the private grain trade is very active. The 1,400 market intermediaries identified in 40 of the most important assembly markets can be divided into two general categories--small assemblers and wholesalers.

#### **Small Assemblers Include:**

1. Day traders, who, with an extremely limited capital base (sometimes \$20 or less), purchase small quantities of grain (3-15 kg) at a time. Often these traders resell one sack of grain before beginning to assemble another. During the period immediately following the harvest, volumes of 300-400 kg per day are not uncommon in areas where production is greatest. Quantities collected are generally resold to wholesalers before the end of the day. Margins of 1/2 to 1 cent (US) per kg purchased are sometimes increased by imprecise weighing techniques.

2. Commission agents, who assemble grain with money advanced by, or borrowed from, larger traders, generally wholesalers. They operate similar to day traders, but remuneration is on a flat daily fee or per sack basis, rather than a buy/sell margin.
3. Food deficit producers and non-producers, who assemble grain in order to store for their own consumption later in the year.

Preliminary results of surveys of merchant operating procedures (Table 1) indicate that 24 percent of assemblers surveyed store grain, generally for short periods necessary for stock turnover. Exceptions are those who store for home consumption and a few who speculate on interseasonal price variation. Transportation of grain was performed by 21 percent of those surveyed. Although precise results on distances transported are not yet available, they appear relatively short.

Financing of transactions is largely from personal funds or a mixture of personal and other funds. Table 2 indicates that other merchants and relatives are also important sources of funds. Of the 39 percent of small assemblers receiving funds from other merchants, one-third were relatives of the merchants. Use of financial institutions for financing is negligible.

### **Wholesalers**

Wholesalers include both licensed and unlicensed traders handling a variety of types of grain, and varying volumes. In general, wholesalers located in zones of greatest production specialize in locally produced grains, while wholesalers based in deficit regions often handle both locally produced and imported grain. Imported grain is also consumed in the major producing area, but the distribution channels are more separate. Wholesalers handling imported grains are more likely to be licensed.

In addition to physical assembly of break-bulk grain in periodic markets, 45 percent of the wholesalers indicate that they transport grain between areas of assembly and either urban centers or rural areas with food deficits. Other dealers sell to someone who (1) transports the grain or (2) stores and makes transports arrangements later. Eighty-eight percent of the wholesalers surveyed (for whom results have been tabulated) indicate that they store, either for short periods as part of buy/sell operations, or for longer periods in hope that seasonal price increases will more than cover storage costs.

Wholesaler involvement in financing the marketing system extends from carrying of inventories to financing of commission agent assemblers, as mentioned above. They also have investments in storage and warehousing facilities and transportation.

Table 1. Grain Merchants Performing Storage and Transport Functions

	Assemblers (%)	Wholesalers (%)	Total (%)
Storage	24	88	49
Transport	21	45	31

Preliminary results based on 167 responses.

Table 2. Sources of Financing Used by Grain Traders

	Assemblers (%)	Wholesalers (%)	Total (%)
Own Funds	74	80	77
Relatives	23	18	21
Other Merchants	39	16	29
Banks	2	11	6

Columns do not total to 100 percent because multiple sources were identified by some respondents. Preliminary results based on 167 responses.

Exploratory surveys indicate that wholesalers regularly cite access to capital as a major constraint. Of those formal survey responses analyzed, 80 percent of wholesalers use their own funds, 16 percent obtain funds from other merchants, and 11 percent obtain funds from banks (categories are not mutually exclusive). Additional precision on financing, transportation, and storage activities will be available after further analysis of ongoing surveys. To be licensed, wholesalers are required to demonstrate a \$6,000 bank account balance. Some of the bank credit actually used is in the form of overdrafts treated as a line of credit. Sales volumes of wholesalers vary tremendously, from hundreds of dollars, to hundreds of thousands of dollars in annual sales.

In sum, the private sector marketing system is functioning in Senegal. It is moving thousands of tons of grain from areas of sale to areas of demand, despite regulatory uncertainty and imprecision.

By providing producers with markets for agricultural products and consumers with supplies, the private trade is contributing to government policy goals. Yet, in part, the private trade is willing and able to perform these functions because government and public agencies are seemingly unsuccessful in achieving goals in terms of price policy and "official" marketing. Analysis of ongoing surveys will permit a more detailed evaluation of costs, margins, and risks.

### The Public Sector

For the 1984/85 marketing season, the CSA set a purchase target of: 40,000 tons of grain; 32,000 metric tons of millet; 7,500 tons of corn; and 500 tons of cowpeas. The objectives were to permit (1) sales to millers and development of industrial processing of local grain; and (2) cash sales and free distribution in deficit areas.

Assembly was to be conducted directly by the CSA (30 percent), through cooperative organizations (50 percent) and rural development agencies. Official producer prices for all three commodities were set at 60 francs CFA/kg. This was a 9 percent increase for millet and cowpeas and an 18 percent increase for corn. Although announced as an incentive to producers, in reality, the prices were almost universally below the parallel market prices. The total quantity of millet actually purchased was about 1,700 tons. For the current marketing season, public sector activity in marketing may have helped put a floor under prices in some places. It obviously can do very little toward developing a private processing industry or government grain sales.

At the same time, uncertainty about the legality of sales to private traders at higher than official prices led to confusion among producers, traders, regulatory, and administrative officials. In several parts of one region, it was announced that private

trade in grain was illegal and police were sent to markets to halt it. As noted above, the need for appearances of regulatory compliance has led to fictitious bookkeeping. It has also led to corruption and behavior in apparent contradiction with official goals as market participants seek ways to minimize transactions costs and continue to function within the existing system.

### CONCLUSIONS

Senegal and many other West African nations approach marketing and agricultural policy from a long history of government planning and state intervention (Berg, Blandford, CILSS, Ouedraogo, Wilcock). "Conventional wisdom" indicates an exploitive private sector from which producers and consumers must be protected. While the literature sometimes seeks to demonstrate the "competitive" nature of some African markets (Jones and others), the methodology has been criticized (Harriss) and not all African policy makers are convinced. In the absence of adequate empirical evidence and sound economic analysis, discussions of appropriate roles for public and private sectors in grain marketing are often based on ideology and conventional wisdom.

The study presented here seeks to contribute to the available evidence and analysis through a brief introduction to private and public sector activity in Senegal's grain subsector. Preliminary survey results indicate that despite regulatory uncertainty, a system of traders moving grain between areas of temporal surplus and deficit has developed since Senegal abolished ONCAD and began a transition toward less direct government involvement in marketing. This private system handled storage and transportation and is largely self-financing. Further analysis of survey data will provide more detail on operating procedures, costs, and margins.

Several observations on government objectives and policy options can be made. The regulatory environment surrounding agricultural markets in Senegal is regularly uncertain. If decision makers really want to make decisions regarding private and public sector roles in marketing, both easy and difficult steps are necessary. The "easy" steps involve more timely decision making and a concise definition of "the rules of the game." These rules have important impacts on incentives for market participants to perform according to policy makers' game plans. At the same time, when the rules of the game are overly restrictive, players often find ways to change the rules, either officially or unofficially. Thus, policy decisions and non-decisions lead to some outcome, whether intended or not.

The "difficult" steps revolve around the competitive nature of certain policy choices. One cannot assure high prices to producers and low prices to consumers

without finding a way to pay for it. One cannot at the same time use the same grain to develop processing industries, build grain reserves, and feed food deficit areas.

Decision making in general terms may be difficult, actual implementation even harder.

Pricing is another critical area involving hard choices. Senegal's government devotes significant resources to defining price policies that are presented as consistent with its own objectives of increasing production and assuring supplies to consumers. It also must respond to pricing objectives defined by the IMF and the international community in order to assure access to the credit needed for structural adjustment. As Timmer points out, getting prices "right" may not be necessary, but getting prices "wrong" can be devastating to the pursuit of government policy objectives. Where parallel or private market alternatives to public sector prices exist, it is also important to bear in mind that getting prices "right" may be neither necessary nor sufficient, if prices are not enforceable. In sum, deciding on the objectives of price policy and any policy is essential, prior to discussing levels, institutions, etc.

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