Regulatory Uncertainty and Government Objectives for the Organization and Performance of Cereal Markets: The Case of 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 No. 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, and farm-level production strategies. 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 scientific advisors to several ISRA research programs.

The project has organized several short-term, in-country training programs in farming systems research, farm-level agronomic research, 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 conducted under this collaborative project was originally published only in French. Consequently, the distribution of results 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 Drs. R. James Bingen or Eric W. Crawford, Co-Directors, Senegal Agricultural Research II Project, Department of Agricultural Economics, Michigan State University, East Lansing, MI 48824-1039.

Léopold Sarr
Director
Agrarian Systems and Agricultural Economics Research Department
Senegal Agricultural Research Institute

R. James Bingen/Eric W. Crawford
Co-Directors
Senegal Agricultural Research II Project
Department of Agricultural Economics
Michigan State University

*In December 1987 MSU, ISRA and USAID/Dakar negotiated a 2 1/2 year contract (Contract No. 685-0957-C-00-8004-00) to extend MSU's program of research support and training in the social sciences, agronomy, forestry and research planning.

REGULATORY UNCERTAINTY AND GOVERNMENT OBJECTIVES FOR THE ORGANIZATION AND PERFORMANCE OF CEREAL MARKETS: THE CASE OF SENEGAL

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Mark D. Newman, P. Alassane Sow and Ousseynou Ndoye

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The ideas and points of view expressed in the "working papers" are those of the authors alone and do not represent the official point of view of ISRA.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

REGULATORY UNCERTAINTY AND GOVERNMENT OBJECTIVES FOR THE ORGANIZATION AND PERFORMANCE OF CEREAL MARKETS: THE CASE OF SENEGAL

M. Newman and P. A. Sow and O. Ndoye

INTRODUCTION

This report presents the results of surveys conducted on the organization and performance of the cereal market in the Groundnut Basin of Senegal and, at the same time, discusses a certain number of immediate policies related to the roles of the private and public sectors in the accomplishment of the objectives set by the New Agricultural Policy of Senegal. The report also scrutinizes the impact of regulatory uncertainty on the development of the private sector and, consequently, on the accomplishment of government objectives.

FOOD STATUS IN SENEGAL IN 1984/85

Senegal is located between 12 and 16 degrees latitude north of the equator at the westernmost point of the African coast; it shares borders with Mauritania, Mali, Guinea-Conakry and Guinea-Bissau.

The study presented in this report focuses primarily on the Groundnut Basin, which is a region covering central Senegal, from Dakar to Tambacounda in the East, and from Gambia to Louga and the Sahel in the North. It is essentially an agricultural region containing 50% of the country's population of 6.5 million. Rainfall here is limited and variable, ranging from 356 mm in the North to 813 mm in the South; precipitation is concentrated in the period from June to September.

The groundnut is the traditional commercial crop of this area and the principal cereal crops are millet and sorghum, with corn production developing in the southern part of the region. In general, cereals are produced for home consumption; approximately 5 to 20% of the harvest is marketed.

According to government estimates, millet production for 1984/85 reached 471,447 metric tons, compared to 351,812 metric tons in 1983/84. Corn production, estimated at 98,450 metric tons, reached record amounts in 1984/85.

It is estimated that local production in 1983/84 covered only 32% of nationwide cereal needs. Production in 1984/85 improved over 1983/84, but covered only 51% of cereal needs, in other words still well below the average rate of coverage (65%) achieved during the period 1974/84. The 1984/85 shortage required the importation of 540,000 metric tons of broken rice, wheat and sorghum, most of which was obtained on a commercial basis.

GOVERNMENT OBJECTIVES AND THE MARKETING SYSTEM FOR LOCAL AND IMPORTED CEREALS IN SENEGAL

In April 1984, the government of Senegal announced its New Agricultural Policy (NAP). The key elements of the NAP include ensuring outlets for producers, ensuring supply for consumers and, finally, reducing government costs linked to the achievement of government objectives by means of a gradual transfer of existing responsibilities from the private sector to private intermediaries and cooperative organizations.

For participants in the marketing process, particularly producers and intermediaries, the interest in supplying consumers with local and imported cereals is greatly influenced by the nature of the regulatory policies governing the marketing system. In order to evaluate such policies, it is important to understand the functioning of the system for marketing local and imported cereals. The structural adjustments in progress in many African economies emphasize greater participation on the part of the private sector in performing marketing functions previously handled by state and parastatal agencies. However, the empirical knowledge needed as a basis for various options and strategies is often lacking (Mackintosh, 1985). In the following sections, we will present the rules and the reality of the cereal marketing system in Senegal. The following discussion is based on the results of surveys, conducted since 1983, that targeted the commercial intermediaries in three administrative regions of Senegal, located in the Groundnut Basin.

The methodology of this study is summarized in Newman, Ndoye, and Sow (1985).

PRIVATE AND PUBLIC CHANNELS IN THE CEREAL MARKETING SYSTEM OF SENEGAL

Traditionally, the government and the parastatal agencies of Senegal intervene in the marketing of agricultural products. At the same time, private entrepreneurs have played an important role in the distribution of imported rice and sometimes, concurrently with the public sector, in the collection of cereals, groundnuts and other agricultural products. In 1980, the National Office for the Marketing of Cereals and Oleaginous Products ("Office National de Commercialisation des Céréales et des Produits Oléagineux" - ONCAD) was abolished because of very high costs, a large amount of outstanding credit and several other problems.

Since then, it appears that Senegal has committed itself to the development of private cereal trade (except for paddy rice) in addition to an occasional intervention in the cereal markets by a government agency, the Food Security Commission ("Commissariat à la Sécurité Alimentaire" - CSA). Another government agency, the Price Equalization and Stabilization Fund "Caisse de Péréquation et de Stabilisation des Prix" - CPSP), is responsible for rice, sorghum and wheat imports.

To understand the process by which Senegal has become very dependent on importing cereals at the same time that population growth has outstripped growth in cereal production, it is important to examine the nature of the rules governing cereal trade, as well as the organization and performance of the marketing system. These two elements are the basis for discussing the objectives of government marketing policies, the implications of market regulations and the performance of the marketing system.

RULES OF THE GAME

Commercial regulation and its enforcement strongly affect the functioning of the system in accordance with government policy objectives. The experience of Senegal in this area provides an interesting case study with wide-ranging implications.

The Private Sector

The rules governing pickup, transportation and storage of local cereals (millet, sorghum, corn and paddy rice) have changed considerably since the dismantling of ONCAD. As in many countries where the government or parastatal agencies have traditionally participated in marketing cash crops, the first step toward providing outlets for food crops and encouraging their production is to define in specific terms who the operators will be and what transactions which will take place, as well as the conditions, prices, etc.

Currently, merchants who acquire amounts of millet, sorghum and corn exceeding 200 kg must possess a wholesaler card. (In the case of paddy rice, collection remains a government monopoly and thus no card is issued.) To obtain a card, a wholesaler must prove that he has a bank account of 3 million CFA francs, as well as approved storage facilities. The wholesaler must also attest that he observes proper accounting procedures. In general, in addition to obtaining the wholesaler card, it is necessary to receive authorization to collect a specific product on an annual basis. This requires possession of a bank account of 5 million CFA francs. The list of merchants authorized to collect millet has often been issued later than the designation of legal categories for participants in marketing, or else not at all. During the 1983/84 and 1984/85 marketing campaigns, it was not necessary to have an authorization to participate in the marketing of a given product, apparently because the Ministry of Commerce had decided that the harvest was too small (Sow and Newman, 1985).

The regulatory documents (decrees) specifying that all merchants holding wholesaler cards could participate in cereal marketing were signed in January 1984, for the 1983/84 campaign, and in December 1984, for the

1984/85 campaign, whereas the cereals first appeared in the marketplace in September-October of 1983 and 1984.

Similar situations have arisen in 4 of the last 6 years (see table 1). This creates considerable uncertainty for private merchants and producers.

In the absence of an annual code of regulations allowing them to participate effectively in cereal marketing, merchants may expose themselves to the risk of fines or the seizure of their merchandise if they conduct illegal activities, or may turn their attention to other sectors, which would deprive farmers of outlets and lead to a loss of profit-making opportunities for merchants themselves.

Private wholesalers play a major role in the distribution of rice and sorghum imported by the CPSP. Quotas are assigned by a committee directed by the Ministry of Commerce, and wholesale and retail prices are more strictly regulated.

The Public and Parastatal Sector and Cooperatives

The rules defining the role of cooperatives and public and parastatal entities in the marketing system have also changed over time, sometimes in an imprecise fashion.

Since the dismantling of ONCAD, the official collection of local cereals (millet, sorghum, corn) has been entrusted to the Food Security Commission ("Commissariat à la Sécurité Alimentaire" - CSA) which, until 1984, was called the Food Assistance Commission ("Commissariat à l'aide Alimentaire" - CAA) due to the role it played in distributing food assistance.

The collection of husked paddy rice, the importation of rice and sorghum and the issuance of authorizations for importing wheat were entrusted to the Price Equalization and Stabilization Fund ("Caisse de Péréquation et de Stabilisation des Prix" - CPSP). Groundnut collection was entrusted to vegetable oil mills.

The Rural Development Companies ("Sociétés de développement rural") were made responsible for the official collection of corn and paddy rice at the producer level.

TABLE 1

SELECTED OFFICIAL REGULATIONS OF MILLET/SORGHUM MARKETING: 1979/80-1983/84

Event / Periods	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85
Official opening dates of marketing season	Nov. 19, 1979	Nov. 19, 1980	Oct. 1, 1981	Nov. 15, 1982	Nov. 2, 1983	Oct. 15, 1984
Announcement of official prices	Nov. 19, 1979	Nov. 11, 1980	Oct. 1, 1981	Dec. 8, 1982	Nov. 7, 1983	Oct. 8, 1984
Signature of annual regulations specifying participants	Jan. 4, 1980	Nov. 11, 1980	Oct. 2, 1981	Dec. 8, 1982	Jan. 23, 1984	Dec. 21, 1984
Authorized purchasers/first handlers - producer level	- Authorized licensed wholesalers (agrees)	- Producer cooperatives	- Producer[1] cooperatives	- Producer cooperatives - CAA - Authorized licensed wholesalers	- Licensed wholesalers - Producer cooperatives	- Licensed wholesalers - CSA - RDAS - Producer cooperatives
Authorized purchasers from first handlers above	- Authorized licensed wholesalers	- CAA - Processing industries - Authorized licensed wholesalers	- CAA - CPSP - Authorized licensed wholesalers	- CAA - Authorized licensed wholesalers	- Licensed wholesalers - CSA eventually	- CSA - Licensed wholesalers - Rural development agencies

[1]In March 1982, another decree was signed stating that, besides producer cooperatives, the CPSP, the CAA and authorized licensed wholesalers were allowed to purchase millet from producers.

References: Decrees 80-808 of Jan. 4, 1980; 80-1135 of Nov. 11, 1980; 81-889 of Oct. 2, 1981; 82-967 of Dec. 8, 1982; 84-053 of Jan. 23, 1984; 84-1512 of Dec. 21, 1984.

The cooperatives which had the task of distributing inputs, marketing cash crops and collecting producer debts have been reorganized since 1983. The goal of this reorganization is to make the cooperatives multifunctional and to increase responsibility on the part of the producers. During the 1984/85 campaign, a good portion of the cereal purchases made by the government through official channels were accomplished through the cooperatives.

A preferential price was established for those cooperatives which used their own funds to acquire cereals. The results of the surveys conducted on cooperatives during the 1984/85 campaign indicated that this initiative failed to obtain the expected results because of official price levels, the availability of funds and other factors discussed in the following sections.

During the 1984/85 campaign, the uncertainty of the regulatory code also affected public institutions involved in collecting local cereals. Indeed, the government announced the official opening of the marketing campaign on October 15, 1984, whereas the decree authorizing the CSA to acquire cereals from producers was not signed until December 21, 1984.

Consequently, for both the CSA and the private merchants, the legality of purchasing cereals from producers was uncertain, especially in view of the fact that during the 1983/84 campaign, it was stipulated that the CSA would purchase from private merchants.

Nonetheless, both the CSA and the private merchants purchased cereals from producers, at prices which often varied considerably.

Prices

Prices represent another area where regulatory uncertainty has prevailed. In Senegal, as in many other countries, official prices are established for local cereals. There are producer prices, wholesale prices and retail prices for millet/sorghum and corn. For paddy rice, only producer prices are set. The government also establishes wholesale and retail prices for imported cereals.

The official prices for local cereals do not vary over time or by region, with the exception of the extra markup of 1 CFA franc authorized in Dakar.

The prices of imported rice vary only in terms of a subsidy granted for transportation from Dakar. It is certain that if the official prices are adhered to, this does not encourage private merchants to transport cereals from surplus areas to areas with shortages or to store cereals.

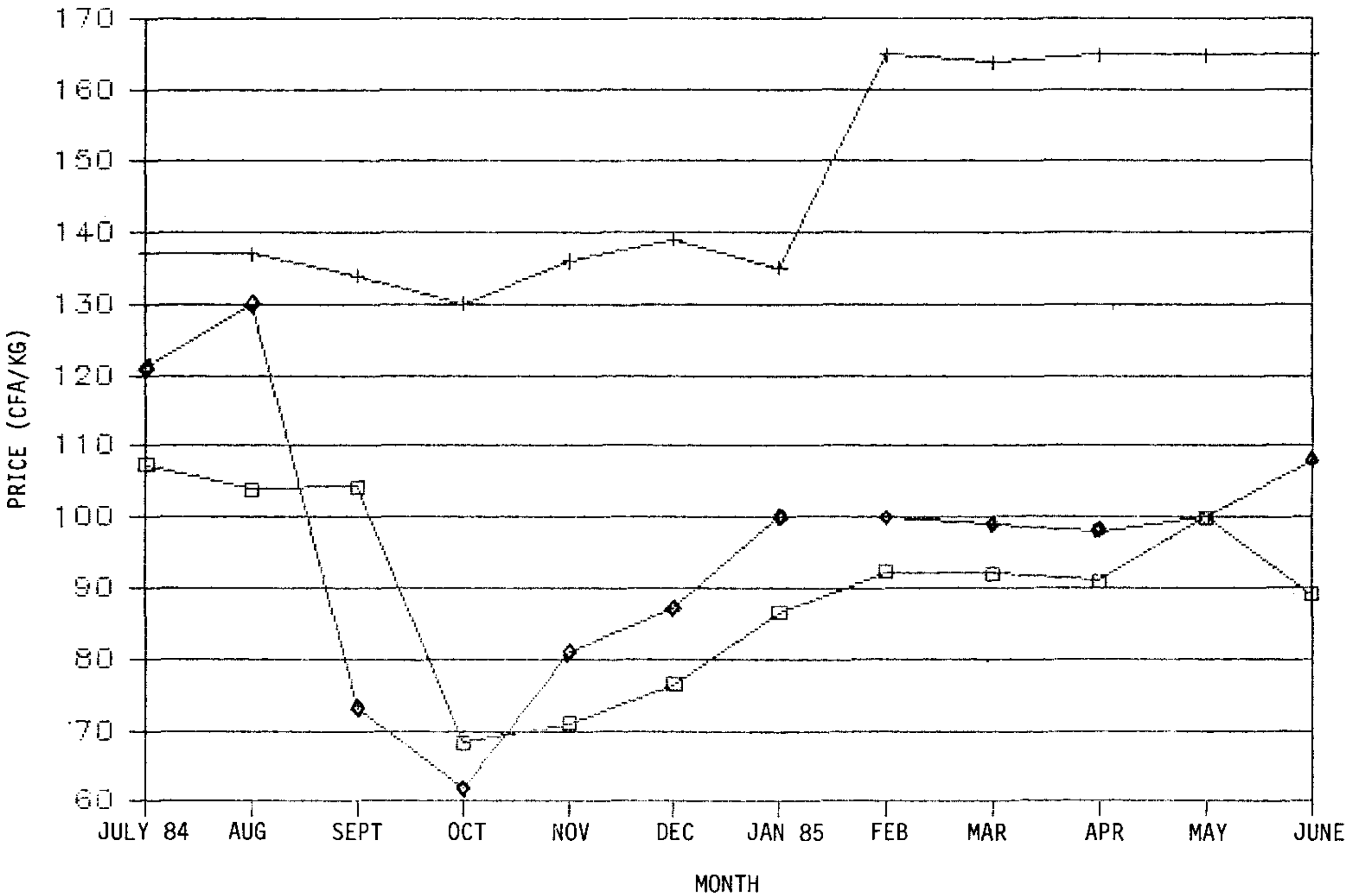
With respect to imported cereals, government regulation is aimed at stabilizing consumer prices and merchant markups. With local cereals, it is difficult to know whether producer prices are in fact floor prices or fixed prices.

In 1983/84, the official price was a floor price, and when market prices climbed higher than official prices the CSA simply withdrew (CSA officials say that this was due to lack of funds). During the 1984/85 campaign, there were reports of a number of cases of seizure by administrative authorities of cereals sold at prices above the official prices during the first months of the "official" marketing campaign.

These observations call into question the objectives of the government in the area of pricing policy. As can be seen in figure 1, the prices noted at 36 markets in the Groundnut Basin show that, for millet and corn, the average producer price paid by merchants exceeded the official price (which was 55 francs/kg until October 1984 and 60 francs/kg thereafter) from July 1984 until June 1985. The minimum price observed was below the official price only during the harvest period and only in areas of high production.

As a result, while the official producer price has perhaps functioned as a floor price, it has not functioned as a fixed price for the exchange of cereals. This is not a problem so long as the objective is to stimulate producers. But the imprecise objectives of official price fixing has led to other undesirable effects, in addition to the cases of seizure already mentioned. For example, it can be noted that whenever official markups are determined on the basis of official prices, merchants most often base their accounting on the official wholesale and retail prices, even though no transaction is conducted at these prices. In this way they are able to conform to regulations and, accordingly, market cereals. At best, this reduces the interest in requiring or maintaining proper accounting procedures. Furthermore, this situation demonstrates the importance of understanding the participants in the cereal trade as well as the functions they fulfill, so as to be able to evaluate policy options.

Figure 1. AVERAGE PRICES FOR MILLET, CORN AND RICE
GROUNDNUT BASIN, JULY 1984-JUNE 1985



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CURRENT FUNCTIONING OF THE MARKET

The Private Sector

Private trade of cereals in the Groundnut Basin of Senegal includes a network of merchants who purchase small (under 50 kg) and large (50-100 kg) quantities in the villages and at the periodic (weekly) markets.

Grain in sacks of 80 to 130 kg is generally purchased by official and unofficial wholesalers at the period markets. It is then transported to major regional centers where the product is consumed, stored or distributed to areas experiencing cereal shortages. The sacking of the grain is also done at the village level.

The results of the surveys have indicated that, despite the regulatory uncertainty which currently prevails, the private trade of cereals is very active. Fully 1,400 intermediaries were identified in the 40 most important markets of the Groundnut Basin. These intermediaries are broken down into small middlemen and wholesalers.

Small Middlemen

The day-to-day merchants have an extremely limited credit standing (10,000 CFA francs or less) and purchase cereals in small amounts (3-15 kg). In general, these merchants go ahead with the resale of one sack of cereal before filling another. During the period following the harvest, it is common to see quantities of 300 to 400 kg collected daily in regions of high production. The quantities of cereals collected are resold to wholesalers before the end of the day. The gross markups fall between 2.5 and 5 CFA francs per kg and are usually complicated by the imprecision of the measuring techniques.

Commission-middlemen purchase cereals with money advanced or loaned by larger merchants who are generally wholesalers. They operate in the same manner as day-to-day merchants, but their remunerations are based on a fixed daily wage or determined in accordance with the number of sacks collected, rather than by the margin between the purchase price and the sale price.

Producers with deficits and non-producers purchase cereals which they then store for future year-round consumption.

The preliminary results of the surveys conducted with merchants indicated that 39% of the merchants questioned store cereals. This storage is usually of short duration and is necessary for stock rotation, with the exception of those who store grain for personal consumption and those who are engaged in speculation based on the seasonal variations in prices. Thirty-five percent of the merchants surveyed transport cereals. Although precise results on the distances involved are not yet available, distances appear to be relatively short.

Small middlemen finance transactions to a large extent with their personal funds or through a combination of personal funds and funds obtained from other merchants and relatives.

Twenty-five percent of the small middlemen stated that they received funds from other merchants; of these, one-third indicated that the funding came from relatives. Recourse to bank credit for financing the activities of small middlemen is negligible. However, bank credit granted to wholesalers can eventually trickle down to the small middlemen level.

Wholesalers

Wholesalers include both cardholders and those who possess no card. They trade both locally produced cereals and imported cereals in widely varying quantities. The preliminary results of the survey conducted on several occasions with 63 of the largest wholesalers of the Groundnut Basin provide interesting information on private sector activities in the marketing of cereals.

In the sample of 63 wholesalers surveyed, 58% are official wholesalers, which means that they possess a "wholesaler card." Seventy-two percent of cardholding wholesalers had a quota for the sale of imported rice. These individuals account for 42% of the entire sample. The first indications are that the wholesalers located in regions of high production specialize in local cereals, while the wholesalers located in regions of low production tend to handle both local and imported cereals. Wholesalers handling imported cereals generally possess a wholesaler card. The non-cardholding wholesalers included in the sample conducted transactions amounting to 30% of the total volume of imported rice and millet. With respect to primary purchases, the percentage of millet handled by non-cardholding merchants is much higher.

Commercial Volume

Our estimates indicate that the total volume of millet traded by our sample of wholesalers over a six month period (from September 1984 to March 1985) amounted to 9,337 metric tons valued at 722 million CFA francs. The volume of rice traded by the sample is estimated at 4,686 metric tons for the same period. In the same time frame, however, the CSA handled a total volume of only 1,752 metric tons of millet, including 981 metric tons purchased in the Groundnut Basin, as well as 29,758 metric tons of imported rice distributed through the CPSP to quota holders in the Groundnut Basin. (This last figure underestimates the total volume of rice in the Groundnut Basin since, of the 95,000 metric tons distributed in Cape Verde, a portion made its way to the Groundnut Basin.) In other words, the sample of wholesalers that we surveyed collected nine times more millet than the volume collected through official channels in the Groundnut Basin, and this sample in fact represents probably 10% of all the millet marketed in the entire country.

Studies of the activities and markups of wholesalers are presented in greater detail in Newman, Ndoye, and Sow (1985). These studies indicated that most wholesalers (82%) attempt to turn over their stock in a period of one month after purchase in spite of the fact that they have at their disposal storage facilities which are not fully utilized.

Apparently, the standard procedure followed by wholesalers involves turning stock over rapidly right after the harvest, when millet is plentiful, then building up stocks 5 to 6 months after the harvest when the availability is lower and the pre-harvest gap is approaching. However, some merchants say that uncertainty concerning the possible distribution of food assistance and its impact on prices serves to increase the risks of prolonged storage, which is intended to take advantage of the seasonal variations of prices during the period preceding the harvest. The speed with which wholesalers sell their products depends in part on the limited availability of capital, the high interest rate in the parallel market and the limited access to bank credit.

Financing

According to the results of the surveys, it appears that recourse to personal funds for financing commercial activities is more common among wholesalers than among small middlemen.

Eight percent of the wholesalers receive a portion of their financing from their relatives, 10% from other merchants and 6% from banks. Twenty-eight percent of the wholesalers stated that they make use of borrowed capital for their operations. In response to a question about how much a merchant would pay if he borrowed 100,000 CFA francs for one month, the interest rates cited range from 0 to 25% per month, with an average of 7.2% per month. In contrast, the official interest rate for banks is close to 15% per year, which is equivalent to 1.25% per month. We should, however, note that Senegal is a predominantly Moslem country, which makes the question of paying interest an extremely sensitive issue.

Even though an interest rate of 7.2% per month seems extremely high, a preliminary analysis of the data on the other aspects of financing indicates that the rates of repayment are highly variable, and often very low. According to the wholesalers, the rates of repayment on loans granted range from 5 to 100%, with an average of 62%. This means that even if interest rates for private credit appear very high, they do not necessarily produce large profits, given the problems of repayment.

At present, it appears that the economic recession in Senegal places wholesalers in a position where they cannot market cereals or other products without making loans; but when they do grant loans, they encounter problems of repayment. Furthermore, the survey results show that the wholesalers make many loans to other merchants, retailers, farmers and consumers. Yet in the event that the loans are not paid off, the wholesalers consider that they have no recourse at their disposal to recover the debts.

Whatever the circumstances, the cost of the capital used in ongoing activities and the opportunity cost of the capital invested in the enterprise are very important factors which affect both the cost of marketing cereals and the decisions that wholesalers make regarding the placement of their investments. If the cost of the capital is close to the average mentioned above, financing purchases of millet at the level of the producer and at the official price will cost 4.3 CFA francs per kilo, or 36% of the officially established commercial markup. However, figured in terms of the basic interest rate charged by banks, the cost of financing comes to 0.8 CFA francs per kilo per month, or only 7% of the official markup. Thus, the cost of capital can be a very important factor in determining the markups necessary to cover the wholesaler's marketing costs. It is important to point out that the above calculations do not include capital invested in weighing devices, storage facilities, transportation, offices and sales outlets.

Where problems of liquidity exist, regulation is a treatment which is worse than the sickness. Indeed, to obtain a wholesaler card, one of the conditions required of the candidate is that he present a bank statement showing a balance of 3 million CFA francs.

The above factors demonstrate that it is essential to have a significant financial capacity in order to conduct the activities of a wholesaler. Still, the fact of possessing a bank statement does not guarantee that the wholesaler will be able to meet his financial obligations. Moreover, a requirement of this sort serves as a barrier against entry into the cereal trade. The regulations for the 1984/85 marketing campaign require that merchants who purchase from producers possess wholesaler cards, signifying that, among other things, they have a bank account of 3 million CFA francs. Our observations during the campaign indicated that many small middlemen purchase each day amounts of millet weighing as much as 100 kg, which, at the official retail price, corresponds to a maximum value of 7,300 CFA francs.

Transportation

The same constraints are imposed by the regulations concerning the transportation of cereals between areas producing surpluses and areas experiencing shortages. To transport more than 200 kg of local cereals from one region to another, a wholesaler or retailer card is required, even though the value at the official price varies from 12,000 to 14,600 CFA francs. If such conditions were rigorously enforced, they would further limit available liquidity in the system, as well as the commercial opportunities for producers.

The government determines transportation costs by establishing a schedule of tariffs regulating how much government agencies pay for transportation. Studies conducted on the prices actually paid indicate that the wholesalers consider adherence to the schedule to be relatively rare. In practice, transportation costs for distances under 100 km are much higher than the official rates; beyond 100 km, however, the ton-per-kilometer real cost is lower than the official rate. This can be explained in part by the fixed costs involved in stopping the vehicle for loading or unloading. Nonetheless, the setting of an official rate by means of regulations does not take into account the savings generated by volume and over distance which the market forces seem to incorporate.

Regulation

In evaluating the tasks to be assigned to the private sector and those to be retained regarding the marketing system, the Senegalese government, and other governments as well, seek to ensure that marketing will be conducted effectively and that it will be profitable, but without seriously compromising government objectives with respect to producers, consumers and the balance of payments. If marketing is conducted effectively, the outcome would be of great benefit to producers and consumer costs could drop. At the same time, the government may be reluctant to count on an unregulated private sector with which it would share the benefits stemming from savings in transactions with producers and consumers. For this and other reasons, the government regulates the marketing system.

As emphasized earlier, frequent changes in regulations and the relatively late announcement of the "rules of the game" lead to uncertainty in cereal marketing channels. In general, the official regulations define the participants in cereal marketing and specify certain conditions relating to when transactions must begin and what prices will be charged, for example. In addition, different qualities of products are defined in very general terms, although no specific classifications are used for local cereals in local marketplaces.

Official regulation also takes the form of checking, among other things, wholesaler cards, authorizations for transporting cereals and other products when necessary, the precision of weighing devices, and pesticides used. For wholesalers, adherence to regulations represents a major operational cost in terms of time devoted to understanding the regulations and to monitoring by the authorities of the enforcement of the provisions, in addition to the costs involved in obtaining an authorization or a wholesaler card or paying possible fines. Resorting to "arrangements" with government inspectors responsible for enforcing the regulations represents yet another cost.

The studies revealed that radio and other merchants are the principal sources of information for wholesalers as regards the true meaning of the regulations. Some wholesalers also listed the government agents responsible for enforcing regulations, the local chambers of commerce and newspapers as other important sources of information.

Wholesalers told us that they have many contacts with government officials responsible for enforcing regulations, given that, on average, they are monitored 4.2 times per month by economic monitoring agents, government and local police agents, Water and Forestry agents and other civil servants.

As for "fines" paid to agents responsible for enforcing regulations, there was little difference between merchants who had cards and those who had none. Fifty-four percent of wholesalers who paid "fines" during a period of 4 to 6 months after the 1984/85 harvest had a card. In 35% of the cases mentioned, receipts were provided when "fines" were paid. In 65% of the cases, an "arrangement" was made. The total amount of the fines paid by 60 of the wholesalers questioned came to 460,000 CFA francs, for an average of 5,000 CFA francs per "fine" or arrangement. A more detailed analysis of the data will make it possible to evaluate with greater precision the reasons for the fines and the other costs associated with adherence to regulations.

Regulatory uncertainty creates a climate which encourages ignoring the regulations and/or corrupting agents responsible for enforcing regulations intended to make the system function well. The fines mentioned above represent only 0.25% of the official markup, or 0.03 CFA francs per kilogram of marketed cereals.

Nevertheless, this estimate does not take into account the cost in time spent by merchants to conform to regulatory provisions as well as other commercial activities not undertaken for fear of breaking regulations. For the government, enforcing the regulations represents an expense, and fines collected, when placed in the government coffers, help defray the cost of enforcement.

In the final analysis, the question is to determine whether the process of enforcing the regulations is consistent with government objectives, which are of course the reason for the existence of the process. Some individuals will always make "arrangements" and conduct their affairs as they wish. At the same time, if resorting to arrangements is a practical necessity for merchants, this can constitute a barrier for other merchants who want to start up or expand their activities.

Markups

The analysis of markups and average marketing costs for a sample of 63 wholesalers provides interesting results. It can be seen that the official prices for local cereals do not allow markups high enough to cover storage costs for 3 months and transportation costs between areas of high production and areas with shortages, even inside the Groundnut Basin. This analysis is based on the official tariff schedules for transportation and the cost of capital, conservatively estimated at 15% annually. The official prices for imported rice would also lead to negative markups, using the hypotheses presented above, if transportation between Dakar and consumer regions inside the country were not subsidized.

Budgets based on average millet prices at harvest time and in January 1985 in a "surplus" region, and three months later in a major consumer region (Louga), indicate that the gross markups were much higher than the officially authorized markups. Nonetheless, the net markups, which include remuneration for the wholesaler's labor and management, amount to 5 to 8% of the sales price, given the months of storage and transportation between the two zones. If the cost of capital is 7.2% per month, the average rate for loans in the unofficial sector, then the net markups would be negative for all scenarios.

All of the budgetary scenarios have been evaluated without taking into account the costs associated with adherence to regulations, and the other hypotheses are rather conservative. These scenarios show that for a wholesaler who handles 100 metric tons of cereals during the six months following the harvest (roughly the median for wholesalers dealing in millet, but not in rice), it is realistic to think in terms of a net income of 100,000 CFA francs per month. This is more or less equivalent to the salary of a mid-level official, although the risks incurred are large and the data demonstrate considerable variability in costs. As mentioned earlier, the possible seizure of grain in the case of unauthorized trade, the payment of fines and "arrangements," the risk of not being paid back for credit sales, etc., will all affect the chances of reaching the "feasible" income level given here. To attain this income level and these markups, adherence to official prices and markups set by the regulatory system is not necessary.

To summarize, it appears that private trade involves costs and markups which, while not appearing excessive, are nonetheless higher than those authorized by official regulations. This situation has important ramifications for the pursuit of government objectives. It appears that the government has a choice between tolerating illegality while establishing fixed prices, revising its calculations for price-setting in order to better reflect real costs, or else granting subsidies to middlemen so that they can fulfill functions which the official gross markups do not adequately remunerate.

CURRENT REGULATION AND GOVERNMENT OBJECTIVES

Senegal's New Agricultural Policy and other recent documents (Diop, 1984, 1985; Diouf, 1985) emphasize greater private sector participation in the marketing of local cereals. However, uncertainty and other elements of the current regulations represent obstacles to the functioning of private sector activities. Under the present game rules for marketing local cereals, we find prices which do not vary seasonally, thus remaining uniform over time and over distance; there is an official opening date for the marketing campaign; and only cardholding wholesalers are authorized to purchase from producers. The more merchants there are, the greater the competition, yet current requirements for obtaining a card serve as a barrier to entry into the profession, without providing much assurance to those who deal with cardholding merchants. Furthermore, the official prices for local and imported cereals fail to encourage the transporting or storage of cereals necessary for supplying areas with shortages. Thus it appears that certain elements of the official regulations work against the objectives of the NAP, which include providing outlets for producers and a guaranteed source of supply for consumers.

Based on the surveys conducted in 1984/85 on traders in the cereal market, private merchants were found to be responsible for most cereal marketing (for both local and imported cereals). The market prices for local cereals (at the consumer level as well as the producer level) were generally higher than official prices; and purchases from producers typically began before the official opening date of the campaign. The late announcement of the list of merchants authorized to purchase, transport and resell grain was made while large quantities of cereals were being handled by unofficial merchants. Given the uncertainty which prevails with respect to the rules of the game, small-scale corruption on the part of government inspectors responsible for enforcement was encouraged.

Each month, the CPSP, a governmental organization, supplies imported rice to wholesalers in both urban and rural settings. Transportation and storage charges are assumed in part by the CPSP, with the result that, except in cases of unexpected shortages due to problems in importing the product, those merchants who specialize in rice are less inclined to sell at prices exceeding official prices than are those who deal in millet. For millet, there is more frequent interplay between supply and demand. During most of 1984/85, the market prices for rice remained very close to official consumer prices, while the producer prices for millet and corn were generally higher than the official consumer prices (see figure 1).

Thus, simply setting official prices cannot serve as an instrument for increasing consumption of local cereals. For the policy to be implemented, someone must be prepared to produce and sell at the established prices.

POLICY OBJECTIVES AND THEIR IMPLEMENTATION

Although in general terms the objectives of the government are well defined, the order of priority of different policy objectives and options is less clear. In spite of the fact that policy documents emphasize liberalizing the market, the cereal marketing roles to be attributed to the public and private sectors are not specified.

For example, in 1984/85 according to official documents, the CSA was to collect 32,000 metric tons of millet to be sold in regions with shortages, distributed free of charge in other regions and furnished to processing industries.

However, according to CSA reports, the first objective was to guarantee a minimum price for producers. While this particular objective could require the presence of CSA agents in a large number of rural markets, the purchase of the 32,000 metric tons of millet could be accomplished in a much smaller number of markets, if the CSA had sufficient flexibility to pay the going price.

Given that the different responsibilities assigned to the CSA are sometimes in conflict, priorities must be set if the goal is to carry out tasks successfully. For example, if the CSA's highest priority is to purchase cereals for free distribution in drought-stricken regions, it is not essential that CSA agents be present in all rural markets or that prefinancing be granted to cooperatives. On the other hand, if the highest priority is to support a minimum producer price, producers should not be required to sell at official prices when the market prices are higher.

Insofar as higher prices stimulate production, asking producers to sell at prices below their opportunity cost runs counter to government objectives aimed at promoting local cereals. Thus it is clear that, in the face of contradictory objectives, certain goals are not likely to be attained.'

REGULATION AND MARKET PERFORMANCE

Regulation can represent an important tool for facilitating the accomplishment of specific policy objectives. A clear and precise definition of the rules governing such areas as participants and pricing policy can reduce regulatory uncertainty and facilitate the functioning of the marketing system.

However, it is important to note that, with respect to regulations (a form of government intervention), good intentions are never enough, and particular attention should always be given to the multiplicity of consequences which might result from the adoption of a regulation. The analysis presented in this report has shown that the unexpected and undesirable consequences of certain regulatory provisions can outweigh the anticipated results of the regulations. As pointed out by Stigler (1973, p. 12):

> "If we seek to improve the imperfections of our society without understanding the actual functioning of the legally established agricultural and food systems, as well as the effects which these systems produce, it is only through pure chance that we might succeed."

SUMMARY

Government regulation often produces effects which run counter to the objectives which the government seeks to accomplish.

This report is based on the results of surveys conducted in Senegal. The surveys in question focused on participants in the cereal subsector during the 1983/85 period. Particular emphasis was placed on the relation between regulation, on the one hand, and private sector activities, costs and markups. The survey results showed that the private sector plays an important role in reaching government objectives. These objectives include creating commercial outlets for producers, supplying consumers and limiting the cost of government intervention. However, the contribution of the private sector has most often developed in spite of government regulation, rather than as a result of government regulation.

Finally, this report includes discussions related to the definition of the appropriate roles for the public sector, the parastatal sector, the

cooperatives and the private merchants all playing a part in the Senegalese cereal market. The potential contribution of research is also emphasized, particularly as regards the development of an improved food and agricultural policy.

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