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THE DYNAMICS OF GRAIN MARKETING IN BURKINA FASO

VOLUME I

AN ECONOMIC ANALYSIS OF GRAIN MARKETING

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Final Report
Burkina Faso Grain Marketing Development Research Project

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ERRATA

The unit of measure for Tables 2.7, 2.8, 2.9 and 2.10 should be "metric tons" only, not "in kilograms." (pages 63 and 64)

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PREFACE

Studies of marketing in developing countries frequently are able to confirm original preconceptions. Two sets of researchers with diametrically opposed hypothesizes on the efficiency and competitiveness of a marketing system who examine the same system may both be able to assemble substantial evidence in support of their views. Both perceptions are frequently correct. The following study of private sector marketing of grain in Burkina Faso is a case in point. Competition and collusion, efficiency and inefficiency can often be found side by side and changing in response to new conditions. The collusive arrangements of one year may break down in the wake of a poor harvest as competition for available supplies intensifies the next year. Imposition of restrictions on grain movements may be accompanied by major increases in inter-regional price differences.

Indeed, in the assessment of a marketing system the search for where the balance lies between efficiency and competitiveness on the one hand and inefficiency and collusion on the other may be pointless. Most systems, as in the case of Burkina Faso, lie in between. The task of the researcher should be to distinguish those elements of the system which are working reasonably well from those which need improvement. Policy-oriented research such as the current study must go further to define that subset of improvement needs which are good prospects for action. Defining that subset must take account of government policy objectives, constraints on government action and the existence of feasible improvement measures.

The study of private sector grain marketing in Burkina Faso is part of a larger effort supported by USAID/Burkina Faso which encompasses assistance to public sector marketing, namely OFNACER. An important rationale for this study is that a better understanding of private sector marketing of grain is essential to identifying the improvement needs and the possible roles for public policy programs in general and the role of OFNACER in particular.

The study consists of two major components: the national and urban studies which were the responsibility of the Center for Research on Economic Development (CRED) at the University of Michigan; and the

village level studies which were carried out by the Office of International Agricultural Programs at the University of Wisconsin. CRED assumed responsibility for the overall coordination of the research. This volume presents and integrates the findings of both of the study's major components. A separate series of working documents (see Volumes III and IV) cover the specific contributions of individual researchers in the case of the village level studies and the special mission of Dr. Mahir Saul. The results of a country-wide market reconnaissance are presented in the form of a series of regional studies covering the country (Volume II).

The study of private grain marketing in Burkina Faso employed a variety of methodologies and in general sought to steer a course which was unconstrained by adherence to a single paradigm. The results provided insights on the marketing system from a variety of perspectives. It also revealed the limitations of available methodologies for studying marketing. For example, there is no simple way to obtain information on grain movements, a vital component of the information needed to understand and monitor the marketing system. The village level studies were seriously hampered by the fact that the field research period coincided with a poor crop year which seriously affected the amount of grain marketed by producers. The study of marketing systems in developing countries remains less of a science than it should be; and the need for further refinements in methodologies which focus upon the needs and questions of decision makers remains acute. The use of Rapid Reconnaissance (RR) techniques at the regional level revealed the considerable potential for this approach.

The field research portion of the study was carried out by teams of researchers from CRED and the University of Wisconsin during 1983-85. The field studies and the subsequent analysis and write-up were coordinated by Dr. Jacqueline Sherman of CRED, whose extended previous association with grain marketing in Burkina Faso made her an invaluable asset to the research effort. Dr. Sherman assumed leadership of the urban and national studies.

The resident research staff for the national studies included Chantal Dejou, who combined research work with administrative tasks during the

first year of the project before being able to focus upon the RR studies. The regional reports (Volume II), which represent the working documents emerging from the RR effort, should prove especially useful to researchers and officials involved in efforts to assess and improve marketing in specific parts of the country. Ms. Dejou's productivity during the latter period of the field research was due in no small way to the addition of an administrative assistant, Marily Knieriemen, who ably administered project field activities during the final critical period.

Because of abnormally poor rains, three out of the four sample villages we had selected qualified as deficit villages in 1983-84. Since it was very important that we understand the behavior of surplus producers as well as deficit producers, we looked among the other researchers in Burkina Faso for someone with data on the grain marketing behavior of farmers in surplus regions. Christopher Pardy, of the Farming Systems Unit at SAFGRAD, and Dr. Mahir Saul, of the University of Illinois, were interested in collaborating with us. Both the breadth and depth of our conclusions about household marketing behavior were greatly enhanced by collaboration with both of them.

Pardy, of the SAFGRAD research team, had been studying farmers in four villages throughout Burkina Faso. SAFGRAD agreed to allow him to analyze his socioeconomic data for a contribution to our final report (Volume III, Research Report No. 4). We jointly supported that effort.

Saul had been working in Baré, near Bobo-Dioulasso, and had data which were compatible with ours. He agreed to collaborate and we took over his site when he left. Saul's association with the project was relatively brief, but the report of his consultancy mission (Volume IV, Research Report No. 5) had a profound effect upon the thinking of all involved in the study. Drawing upon his extensive research on marketing in Burkina Faso, Dr. Saul was able to shed light on conditions and relationships which assisted in interpreting and qualifying the results from other components of the study.

The combined efforts of the members of the village studies team fielded by the University of Wisconsin furthered our understanding of the farmer's role in the market. It also enabled us to develop and test hypotheses about household behavior across socioeconomic groups and

ecological zones. Charles May concentrated his analysis on understanding farmer behavior in the deficit zone (Volume III, Research Report No. 2). He was also responsible for the gargantuan task of supervising the data collection effort at all the sites and coordinating and supervising the coding, cleaning, and micro-computer entry of the village studies data. Dr. Constance McCorkle did the case study of Dankui (Volume III, Research Report No. 1). Ira Green concentrated on understanding marketing in the Volta Noire area (Volume IV, Research Report No. 6). Ellen Szarleta was responsible for understanding the behavior of farmers in Baré, one of the surplus villages (Volume III, Research Report No. 3).

Whether or not the following study represents a contribution to the understanding of marketing systems and the methodologies for studying those systems is less important than the utility of the findings for Burkina Faso. We feel the existence and contribution of the private grain marketing system is consistent with the policy objectives of the revolution as we understand them. We also believe there is considerable scope for enhancing that contribution and hope this study will aid the government in this process.

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The success of this large field project depended on the efforts of many individuals, from the proposal stage, to coordinating the logistics of getting the researchers into the field, to forging a cooperative relationship with the host government, to establishing trusting working relationships with the farmers, traders, and other people who were interviewed, to assisting the researchers in analyzing the data, to putting the final report together. Our research is better because of all these contributions.

We would like to begin by acknowledging the efforts of the many traders and farmers with whom we worked during our 15 months of field work and without whose cooperation and interest we would not have been able to complete the research. These people shared their time and hospitality with us for relatively little in return. They patiently answered our questions and tolerated the intrusion into their lives and their businesses.

The day-to-day work of data collection was carrried out by a large team of interviewers spread throughout the country. Their dedication and sense of humor account for the high quality of our data. The rapid reconnaissance team consisted of: Jean-Baptiste Kafando, Clement Lingani, Dona Coulibaly, Soulimane Seye, Souleymane Nacambo, and Dramane Kone. The village studies team included: Amadou Ouédraogo, Ibrahim Traore, Youssouf Drame, Hamidou Ouédraogo, Abdramane Nacro, Désiré Sanou, Eugène Sanou, Sibiri Sanou, Téné Sanou, Jean-Martin Sanou, and Abou Sanou. Kalizetta Ouédraogo conducted the urban studies interviews in Ouagadougou. Our research asistants were Albert Ouédraogo and Charles Bonkoungou.

Marily Knieriemen ran the office and was responsible for coordinating the administration of the project in Burkina Faso. Yaovi Aholou assisted with office administration and secretarial tasks. Kwame Nkruma and Esther Ankomah did data entry. Our chauffers, Kisto Traore and Harouna Guira, were not only entrusted with our lives, but often doubled as market interviewers and translators. Hama Bara, Boukari Kabore, and Adama Ouédraogo warded off intruders and assisted with errands.

We received continual assistance from many directors and managers at OFNACER (our affiliate organization), particularly from: the late Laurent Ouédraogo (the former director-general) and his predecessors, Jean-Pierre Ouédraogo (the commercial director), Mr. Benon (the financial director), Mr. Boro (director of logistics and transport), and Tim Mooney (manager of accounting). The numerous ORD officials, hauts-commissaires, and préfets we contacted were always accomodating. We also contacted and received cooperation from many of the private voluntary organizations working in Burkina Faso, especially Save the Children and Six Ss. Mr. Daouda and Mr. Somda of the Direction des Etudes et Projets at the Ministry of Agriculture and Livestock were continually supportive and interested in our research.

We benefited from the insights, experience, and critique shared by other researchers working in Burkina Faso, including Peter Matlon of ICRISAT, Herb Ohm, Ron Cantrell and Chris Pardy of SAFGRAD, M. Moussie from OFNACER, Tom Reardon and Talidia Thombiano of CEDRES, and H. Schar, Michael Roth, and Hans Bliler.

This project was funded by the Agriculture Office of USAID in Burkina Faso. We want to thank the many people in that office who supported us, financially and politically in our research efforts, especially: Al Smith, John Becker, Bonaventure Traoré, and Lee Hall. They were flexible in allowing us to incorporate new methodologies into our work and were genuinely interested in our findings.

Finally there are the home office staffs at both the Center for Research on Economic Development (CRED) and International Agricultural Programs (IAP) who gave logistical, administrative, and technical support. Sherry Cogswell of CRED coordinated the administration of the entire project. Lynn Nelson and Loretta Erdahl administered the project for IAP. Patricia Humphrey (CRED) typed the final report with the assistance of Cathy Warner (CRED) and Nancy Fox (IAP); Leslie Cline and Rachel Tannenbaum also helped. Marian Milbauer, Barbara Smith, and Mark Weisbrot assisted with the data analysis.

Anne Bagnoli edited and was responsible for the production of the final report, in both English and French. Jane McCormick did the graphics. Carol Wilson was responsible for the production of the preliminary report.

A number of other researchers affiliated with both CRED and IAP participated in the project by offering their ideas, critiques, and technical expertise. Larry Herman initiated the project in Burkina Faso, helping select interviewers and sites. Marie Claire Huber and Lynn Ellsworth participated as members of the IAP team in Madison. Edgar Ariza-Nino was involved in developing the research methodology and set-up the micro-computer systems for field data entry and analysis. Charles Steedman, CRED's Assistant Director, participated in the project throughout, giving guidance and support.

This research project was a rich experience professionally and personally for each of us. We can only hope that our results will in some way improve the lives of the many Burkinabè who befriended and assisted us.

We have attempted to recognize the efforts of all the people who participated in this research. The contribution of each individual was important and appreciated. If we have missed someone, we apologize. Thank you.

Of course, the responsibility for errors is ours alone.

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EXECUTIVE SUMMARY

Food security is of paramount importance to the Government of Burkina Faso (GOBF). Recognizing the importance of the grain marketing system in achieving this goal, the GOBF initiated a research program to investigate how the grain market functions and to evaluate its performance. This report presents the results of the research. Based on these results, policy recommendations for improving the effectiveness of the marketing system are offered.

Three studies were undertaken simultaneously. The marketing network throughout Burkina Faso was investigated using rapid reconnaissance techniques. Producer marketing behavior was studied in five villages using a farm management approach, and a one-shot survey was conducted of consumers and prepared food sellers in Ouagadougou and Bobo-Dioulasso to study consumer purchasing habits. The results of these studies are summarized below.

The private sector has two basic types of marketing chains:

1. a chain that is financed entirely by one trader's capital;
2. a chain where intermediaries bargain (negotiate spot agreements) every time grain changes hands.

Traders collect grain from producers in markets and outside formal market places, in villages and along the road to market at crossroads. In a particular area the predominant collection method depends on the importance of markets as exchange points, the condition of the roads, and the amount of marketed surplus.

Public sector marketing is handled by Office National des Céréales (OFNACER), a parastatal which no longer has a monopoly on grain marketing. It buys and sells at official prices. Producer prices are announced in October. OFNACER buys from village groups, from traders, and directly from individual producers. In years when the harvest is particularly bad, OFNACER is able to buy very little at official prices. After the official buying campaign ends, the agency often contracts with private traders to provide additional grain, which it purchases at higher prices. Consumer prices are announced in March, when the official selling campaign begins.

A producer in a heavily surplus area usually has several marketing options: to sell to a buyer resident in his village; to sell to a village group; or to sell to one of the many buyers in or near the markets in his area. Competition among intermediaries to buy from producers in these areas is quite intense. They compete on price as well as on other services they can offer. Producers in deficit or marginally surplus areas generally have fewer sales choices. Competition for buying grain in these regions is considerably less intense.

Traders at all levels try to establish collusive price agreements. This of course dampens the effects of intense competition and focuses it on nonprice factors. In spite of these agreements, however, producers do receive higher prices for their grain in areas where traders from more than one deficit region are trying to buy. As the intensity of competition increases, collusive agreements tend to break down.

In surplus areas where village groups actively buy on behalf of OFNACER, they are an important force in the market as long as they continue to buy. When competition for grain is particularly intense, for example in a short-crop year, these village groups are often approached by traders who want to buy their grain at higher than official prices.

In marginally surplus and deficit regions, cereal banks run by village groups try to offer the consumer an alternative to purchasing from traders. They are beginning to establish commercial relationships with village groups in surplus regions and with wholesalers. Although cereal banks operate in surplus regions, they are not well developed because the need is less pressing.

In areas with effective demand there is intense competition for consumers' business. By contrast, in rural areas of the Yatenga or Sahel, the demand for grain exists but the means for purchasing it is lacking. Many merchants prefer not to trade grain there because of the social pressure to sell on credit.

OFNACER sales are strongest in major urban areas. Its rural sales are greatest in chronically deficit areas. But even in these areas it is not necessarily the poorest who benefit from subsidized official prices. The results of the consumer behavior studies indicate that 10-20% of the sample regularly buy in very small quantities. These are the poorest group of consumers. Since OFNACER does not sell in such small amounts,

they cannot avail themselves of the subsidized grain.

The difference between official and market prices has created two important creative links with the private sector. Because certain public sector employees (e.g. members of the military) have the possibility of buying grain from OFNACER on credit, traders in both Bobo-Dioulasso and Ouagadougou buy that same grain from the employee for 500 FCFA less than the purchase price. This gives the employee cash and the trader grain to sell at market prices. There are also traders who manage to buy directly from OFNACER and resell at market prices.

Among the more important, larger traders there is intense competition to buy grain from intermediaries. This is particularly true in a short-crop year because the trader is virtually certain to be able to sell as much as he can buy.

In areas with a smaller and more irregular marketed surplus, the competition to buy from intermediaries is stronger than for buying directly from producers. Regional or national traders would prefer to let local traders take care of the collection operation. This is particularly true either where markets meet more frequently or in more remote areas where the village resident buyer system is well developed.

While in many ways the marketing system is quite competitive, particularly at each individual level of trade, a large number of wealthy traders are an important force in the market because of the large amounts of capital they control. These traders have a competitive edge in all aspects of trade arising from their ability to provide services to clients.

Analysis of prices suggests that, in general, prices within regions are highly correlated, indicating that price signals are communicated within circumscribed areas, better in surplus than in deficit regions. Between regions, the results are somewhat mixed. Markets along routes where transport costs are higher are less well integrated. Similarly, when trade flows between regions are thin, the markets are generally not well integrated. Unfortunately, there are no price series for some of the more remote areas. Intuition suggests that while prices within a remote region would probably be integrated, they would be less well integrated with those of the distant markets with which they trade.

Seasonal price fluctuations are consistent with traders' storage

costs, except in the heaviest producing region, the Volta Noire.

The analysis of marketing margins and retur on capital shows wide seasonal fluctuations along the different routes. Traders who purchase in supply regions earn hefty profits in the post-harvest season. Traders bringing grain to the Sahel earn high profit margins in the preharvest soudure. Because of the difficulty in estimating margins, and accurately assessing cost, it is difficult to draw broad conclusions about whether and along which routes traders earn excess profits.

Finally, changes over time indicate that because of declining production, markets have become more competitive and integrated than they were ten or twenty years ago. This seems to be the result of increased pressure on the market to redistribute increasingly insufficient supplies.

From these results several conclusions are apparent:

1. Markets seem to work well in surplus regions. Producers have a variety of sales outlets. Price signals are transmitted and responded to, and competition is intense.

2. Markets work less well in deficit regions. Fewer traders buy in these areas. When demand is high enough it attracts traders, but trading in these areas is a riskier operation. Although the distribution system is good, backflows into these areas, especially during the hungry, rainy season, are a particular problem.

3. Seasonal price fluctuations resulting from the annual cycle of agricultural supply and demand are not excessive. They indicate no reason to suspect excess returns to storage by traders in most regions.

4. The return on capital for trading grain from supply regions in the post-harvest season indicates that there is further room for competition in an already competitive market area. Similarly, there is a need for more competition in trade to deficit regions like the Yatenga and the Sahel.

5. The availability and cost of transport have an important effect both on the price of grain and on how well the marketing system functions. Improved roads and increased credit for investing in transport would help alleviate this problem.

6. Private sector traders develop ways to participate in public sector marketing activities and take advantage of them where possible. This is not always bad.

7. Private traders often provide services which are not easily available elsewhere (e.g., consumer credit to public employees,

credit for purchasing grain, availability of grain, possibility of purchasing small quantities, etc.).

8. There is reason, however, to question whether the public sector activities are reaching all segments of the population -- especially those most in need. Poor people in both urban and rural areas are the least able to take advantage of marketing choices. Policies which are aimed at the middle class will not reach the poor. Programs must be designed and targeted specifically for the poor. This will require very decentralized grass-roots efforts.

9. Village-group cereal banks operate differently in different types of regions. Cereal banks are most developed in deficit regions and show potential for resolving the backflow problem. In surplus regions, where the need is less, village groups buy on behalf of OFNACER and generally do not trade on their own account. In those regions, village groups get more involved in the provision of social services. They build schools and village hospitals and run village pharmacies.

10. It should be clear both from the description of producer and consumer marketing activities and from the analysis of competition that the interests of producers and consumers are diametrically opposed. Therefore, any policy aimed at serving the needs of both, at the same time, is bound to do neither particularly well. Such is the case of the consumer and producer price policies which OFNACER is asked to implement.

11. In rural areas OFNACER serves the needs of the poor mostly through the distribution of food aid. Urban consumers who benefit from OFNACER are in the middle and lower middle classes. Retailing operations in cities make it difficult for poorer consumers to take advantage of them.

We have identified five basic interrelated objectives which the government of Burkina Faso considers important, and which are affected by the grain marketing system.

- Sufficient quantities of grain available year-round throughout the country for a reasonable price.
- Market outlets which purchase at renumerative prices throughout the year.
- Food security leading to eventual national self-sufficiency in basic staple foods.
- Adequate income for all residents.
- Equity within and between regions.

Evidence in Burkina Faso and neighboring countries suggests that constraints to effective policies for improving food security are particularly binding. These constraints must be addressed when designing marketing policies, if they are to be effective.

1. Limited financial resources.

2. Limited managerial and administrative capacity (which are both overcommitted by a large factor).

3. The need to generate government revenues.

4. The need to calm regional rivalries.

5. The need to obtain food for the army.

6. Political imperatives which necessitate an ability to respond to short-term crises: for example, the need to distribute emergency food aid.

7. The fact that bureaucracies are inherently inflexible. They operate best when judgment and discretion are unnecessary. They must work automatically if they are to have:

   a. low levels of abuse;
   b. low managerial requirements;
   c. processes which are insulated from the whims of political leadership.

8. Insufficient information to fine-tune decisions.

Based on the above conclusions and taking into consideration the government objectives and constraints, we make the following recommendations for policies and their implementation.

We feel that the government must formally recognize the importance of the private sector in the grain market. Policies should encourage private sector participation and work to discontinue the heretofore adversarial nature of the relationship between public and private sector marketing efforts.

Policy should be directed toward five major areas: (i) clarifying OFNACER's mandate; (ii) promoting private sector trade; (iii) developing support services necessary for an efficient grain marketing system; (iv) supporting local institutions which are involved in food grain marketing; and (v) building the capacity within the Government of Burkina Faso to analyze the food security situation and to take appropriate action.

OFNACER's mandate

The conflicting policy objectives of ensuring remunerative producer prices and low consumer prices throughout Burkina Faso is a "no-win" situation for the government (OFNACER), and consequently for the population at large. In all regions there are people who cannot meet their own consumption needs. A welfare policy to help these people is required. It should not, however, be confused with production policy, as is currently the case.

The government should explicitly acknowledge that OFNACER's main strength is the wholesale distribution of cereals, particularly of food aid. Purchases should be limited to areas of large surplus. Retail activities should be limited. Developing relationships between cereal banks and OFNACER should be explored.

Private Sector Trade

The government needs to begin a consistent set of policies which encourage private sector trading in grain. This should include lifting all restrictions on shipments of foodstuffs within the country and to and from neighboring countries. If the government continues to set official prices, they should be used for OFNACER transactions only. Private sector trade should take place at market prices.

Support Services

Roads. The roads between certain producing and consuming regions need to be improved in order to reduce transportation costs. Particularly high-cost routes are: Dédougou/Ouahigouya; Ouagadougou/Dori and beyond; and Gaoua/Ouagadougou. Improved roads between the Eastern region, and the Sahel and Kaya regions are also needed.

Market Information Services. A system to allow traders to obtain information about market conditions and act upon it immediately is necessary. A radio system which would link rural markets with urban areas is one possibility.

Local Institutions

Local institutions, such as cereal banks, have the potential to play an active role in providing marketing services which traders do not. The

government should encourage this by organizing efforts to improve the management and administration of village groups. Skills of particular use are: accounting, inventory control, employee supervision, delegation of authority to make decisions, and relations with government and nongovernmental organizations.

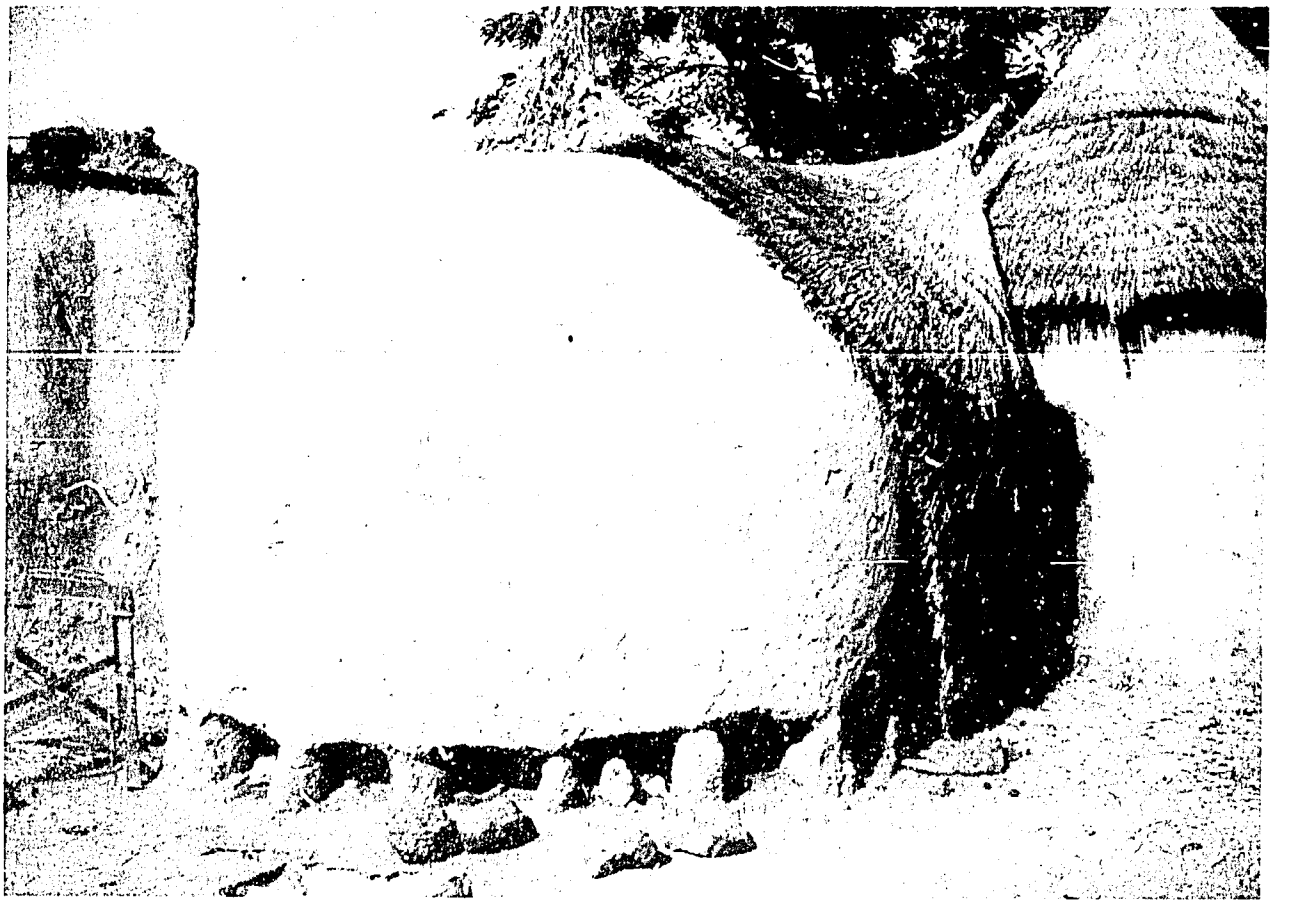
Analytic Capacity

Decision makers require good information about the grain market. As the quality of the information improves it will be used more effectively. Emphasis on improving information should concentrate on the following areas:

- Collection and analysis of consistent weekly wholesale and retail prices throughout the country.
- Collection and analysis of information on grain movements.
- Purposeful sampling of producers who sell grain.
- Collection and analysis of trade data on grains in particular and food in general.

A farmer transporting a cartload of freshly harvested millet from his field.

Rice being threshed in the compound of the Manga Naba (Canton Chief).



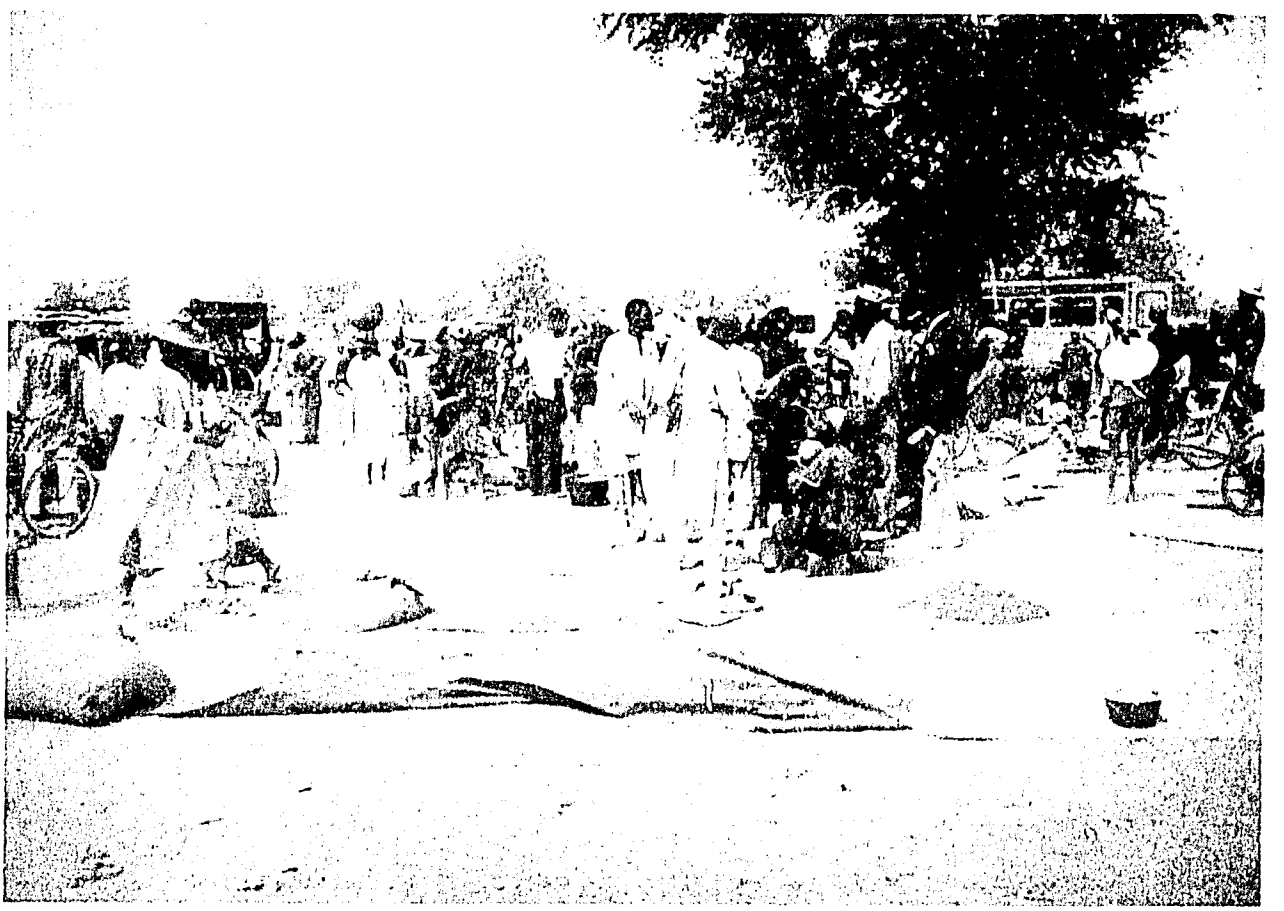
A large banco granary.

Braids of red sorghum being offered as a gift to a village chief on the occasion of his annual feast.

A grain trader and his apprentice awaiting customers. The plate and tine measures are shown in the foreground.

Vendeuses selling grain in the Pissila market.

The stall of a woman preparing and selling donuts in the Manga market.

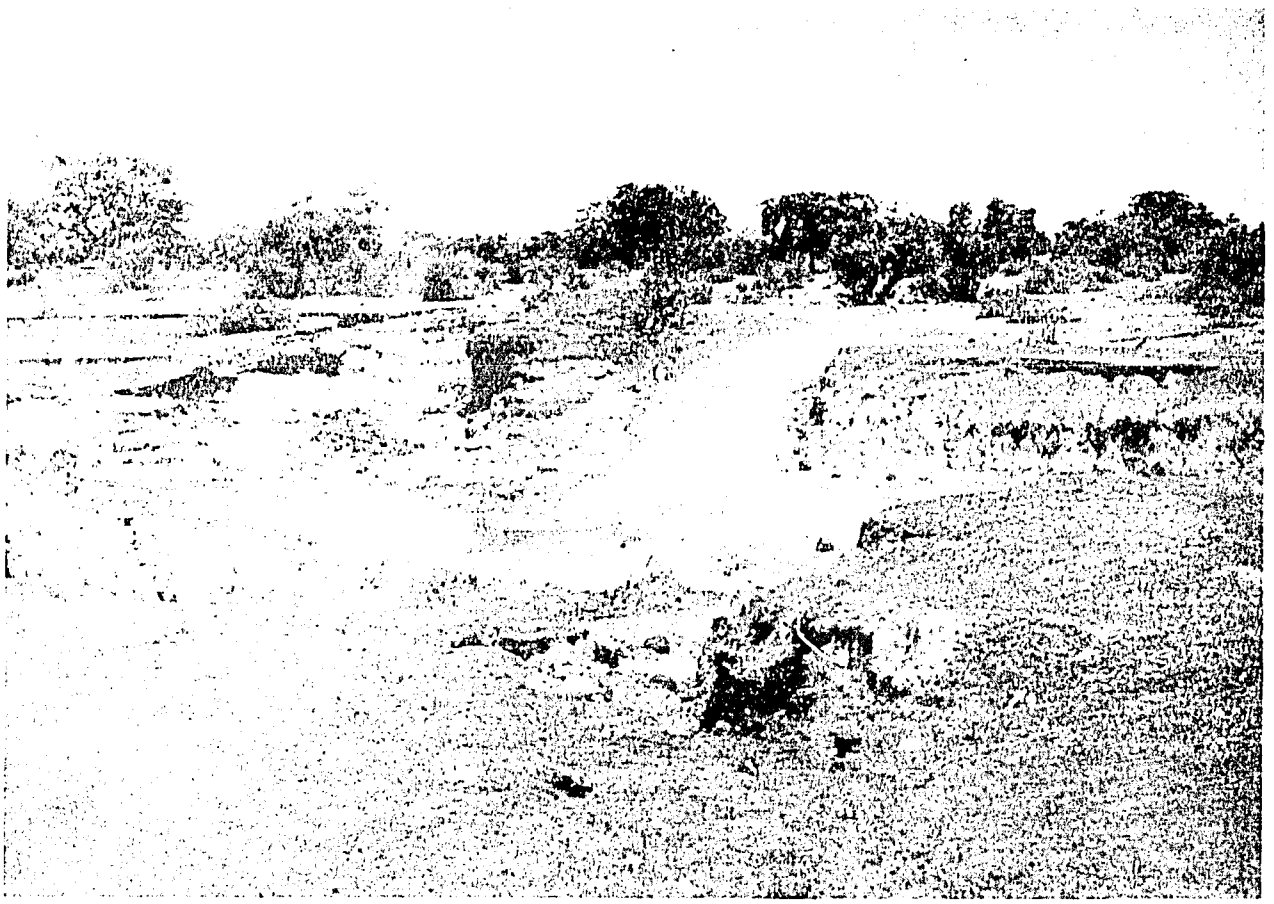


A scene of the grain market in Manga.

Land near Garango (Centre-Est region) in the dry season.

A dolo seller in her stall in the Manga market.

Fields of grain during the growing season.



A road in the rainy season after a bridge has been washed out. Many villages are cut off during the rainy season for several days after heavy rains.

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ACDE	Agence Canadienne pour le Développement de l'Enfance
ADRK	Association pour le Développement de la Région de Kaya
ADS	Agricultural Development Support Project
AVV	Autorité des Aménagements des Vallées des Volta
BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest
BICIA	Banque International pour le Commerce, l'Industrie et l'Agriculture
BIR	Bureau des Institutions Rurales
CDG	Centre de Gestion
CDR	Comité pour la Défense de la Révolution
CDRY	Comité de Développement de la Région de Yako
CEDRES	Centre d'Etudes et de Documentation pour la Recherche en Economie Sociale
CENATRIN	Centre National pour le Traitement d'Information
CERCI	Centre d'Etudes et de Recherches sur les Cultures Irriguées
CFDT	Compagnie française pour le développement des fibres textiles
CFJA	Centre de Formation de Jeunes Agriculteurs
CIDR	Centre International pour le Dévelopment Rural
CILSS	Comité Permanent Inter-état de Lutte Contre la Sécheresse dans le Sahel
CNCA	Caisse Nationale de Crédit Agricole
COE	Conseil Oecuménique des Eglises
COOP	[Groupement villageois] coopératif
CRED	Center for Research on Economic Development, University of Michigan
CRS	Catholic Relief Services (CATHWEL)
CSPPA	Caisse de Stabilization des Prix des Produits Agricoles
CTFT	Centre Technique Forestie Tropical
DAAF	Direction des Affaires Administratives et Financières
DEP	Direction des Etudes et Projets
DIRC	Direction des Institutions Rurales et du Crédit
DSA	Direction des Services Agricoles
ESSEC	Ecole Supérieure des Sciences Economiques
FAO	Food and Agriculture Organization of the United Nations
FCFA	Francs CFA (50 FCFA = 1 franc français)
FDC	Fonds de Développement Communautaire/Save the Children
FDR	Fonds de Développement Rural
FED	Fonds Européen de Développement
FEER	Fonds de l'Eau et de l'Equipement Rural
FOVODES	Fondation Voltaique du Développement et de la Solidarité
FSU	Farming Systems Unit
GS	Groupement [villageois] spontané
GVPC	Groupement villageois précoopératifs
HER	Direction des Services de l'Hydraulique et de l'Equipement Rural
HIMO/PSTP	Programmes de travaux publics à haute intensité de main-d'oeuvre
IAP	International Agricultural Programs, University of Wisconsin
IBRD	International Bank for Reconstruction and Development

ICRISAT	International Crop Research Institute for the Semi-arid Tropics
IFPRI	International Food Policy Research Institute
IGHV	Institut Géographique de la Haute Volta
INSD	Institut National de la Statistique et de la Démographie
IR	Institutions Rurales
IRAT	Institut de Recherche Agronomique Tropicale
IRCT	Institut de Recherches du Coton et des Textiles Exotiques
IRHO	Institut de Recherches pour les Huiles et Oléagineux
MCH	Maternal and Child Health
MCODIM	Ministère de Commerce, du Développement Industriel et des Mines
MDR	Ministère de Développement Rural
MET	Ministère de l'Environnement et du Tourisme
MPS	Marketing Preference Scale (see Volume III, Research Report No. 1)
OFNACER	Office National des Céréales
OMR	Organisation du Monde Rural
ONAC	Office National du Commerce Extérieur
ONBI	Office National des Barrages et de l'Irrigation
ONERA	Office National d'Exploitation des Ressources Animales
ONG	Organisation non gouvernementale
ORANA	Organisme de Recherches sur l'Alimentation et la Nutrition Africaines
ORD	Organisme Régional de Développement
OVPB	Organisation des Volontaires des Pays-Bas
PAM	Programme Alimentaire Mondial
PAN	Plan Alimentaire National
PDAHB	Projet de Développement Agricole des Hauts-Bassins
PDAOV	Projet de Développement Agricole de l'Ouest Volta
PDRI	Projet de Développement Rural Intégre
PIS/AFRICARE	Plan Intérieur de Séquénéga
PPIB	Plan de Parrainage International de Boulsa
PPIK	Plan de Parrainage International de Kaya
PVOV	Projet Vivrier de l'Ouest Volta
RR	Reconnaissance Rapide
SAFGRAD	Semi-Arid Food Grain Research and Development Program
SATA	Service de l'Alimentation et de la Technologie Alimentaire
SIX S	Se Servir de la Saison Sèche en Savanne et au Sahel
SOFITEX	Société Voltaique des Fibres Textiles
SOVOLCOM	Société Voltaique de Commercialisation, maintenant appelée FASO YAAR
SPIG	Sales Preference for Income Generation Survey (see Volume III, Research Report No. 2)
TWIS	Training Women in Sahel
UGVO	Union des Groupements Villageois de l'Oudalan
USAID	United States Agency for International Development
UVOCAM	Union Voltaique de Coopératives Agricoles Maraîchères

CHAPTER 1

INTRODUCTION

Food production is the backbone of Burkina Faso's economy but is inadequate to meet the country's needs. According to Haggblade's report on food security in Burkina Faso (1984), local production meets only 60-75% of protein requirements and 40-70% of lipid needs. Over the last twenty years food consumption has met, on the average, only 85% of minimum requirements. In drought years, of course, the situation is exacerbated. Self-sufficiency in production, though an explicit policy goal, is far from a reality.

Increasing production, however, is not the only way to achieve food security. The precarious nature of production, its uneven geographical distribution, and the need to feed an urban population has focused attention on the need for efficient distribution of what is produced. The marketing system can play an important role in encouraging production as well as distributing supplies. It is worth noting, however, that market price incentives will only lead to increased production if farmers are able to respond. Without appropriate technical packages, production increases will be marginal at best.

Both the Government of Burkina Faso (GOBF) and the United States Agency for International Development (USAID) recognize that the foodgrain marketing system is an important link in achieving food security. Together they initiated a study of the grain marketing system to help determine the most appropriate and potentially fruitful roles for the government in improving Burkina Faso's ability to feed itself. The study was contracted with the Center for Research on Economic Development at the University of Michigan (CRED) with assistance from the Office of International Agricultural Programs at the University of Wisconsin-Madison (IAP). We expect that the results presented in this report will be used by the GOBF, USAID, and other donors in formulating future policy relating to grain marketing in Burkina Faso.

The purpose of the study is threefold: (1) to provide the GOBF with basic data which is necessary for developing effective agricultural and marketing policy; (2) to evaluate the functioning of the marketing system; and (3) to make recommendations for policies, programs, and

projects to improve it. The research design, discussed in Section 1.2, reflects these goals.

The results of the study are presented in four volumes. This volume presents both original data on consumer behavior, as well as synthesis of the data and analysis in Volumes II, III, and IV. Volume II, Rapports Régionaux, presents data on all aspects of the marketing system for each geographical region. Volumes III and IV, Research Reports, contain separate reports on different aspects of the grain marketing system. Four out of the six reports present data and analysis of producer behavior. Volumes I, III and IV exist in both English and French. Volume II exists only in French.

1.1 BACKGROUND

Year-to-year fluctuations in staple food production caused primarily by weather changes have long dominated the rural sectors of Burkina Faso and other countries of the Sahel. Traditionally, these fluctuations have been buffered at the household level by carryover stocks accumulated following good harvests. In recent years, however, rapid population growth, declining availability of good land in high density regions (notably on the Mossi Plateau) and a general shift of resources away from food production to cash or export crops and nonfarm activities have combined with sometimes protracted periods of poor rainfall to cause a decline in per capita food production. Rapid urbanization and the spread of the transport network have led to the growth of marketing systems for staple foods which have linked rural areas to one another and to urban centers. Rural, as well as urban residents have increasingly relied on the marketing system to make up for shortfalls in local production. In drier areas such as the Yatenga and the Sahel, deficits of staple foods must be met by supplies from other regions or imports almost annually (refer to Map 1.1).[1] Food shortages accompanied by high prices, particularly during the preharvest or soudure period, are an increasingly

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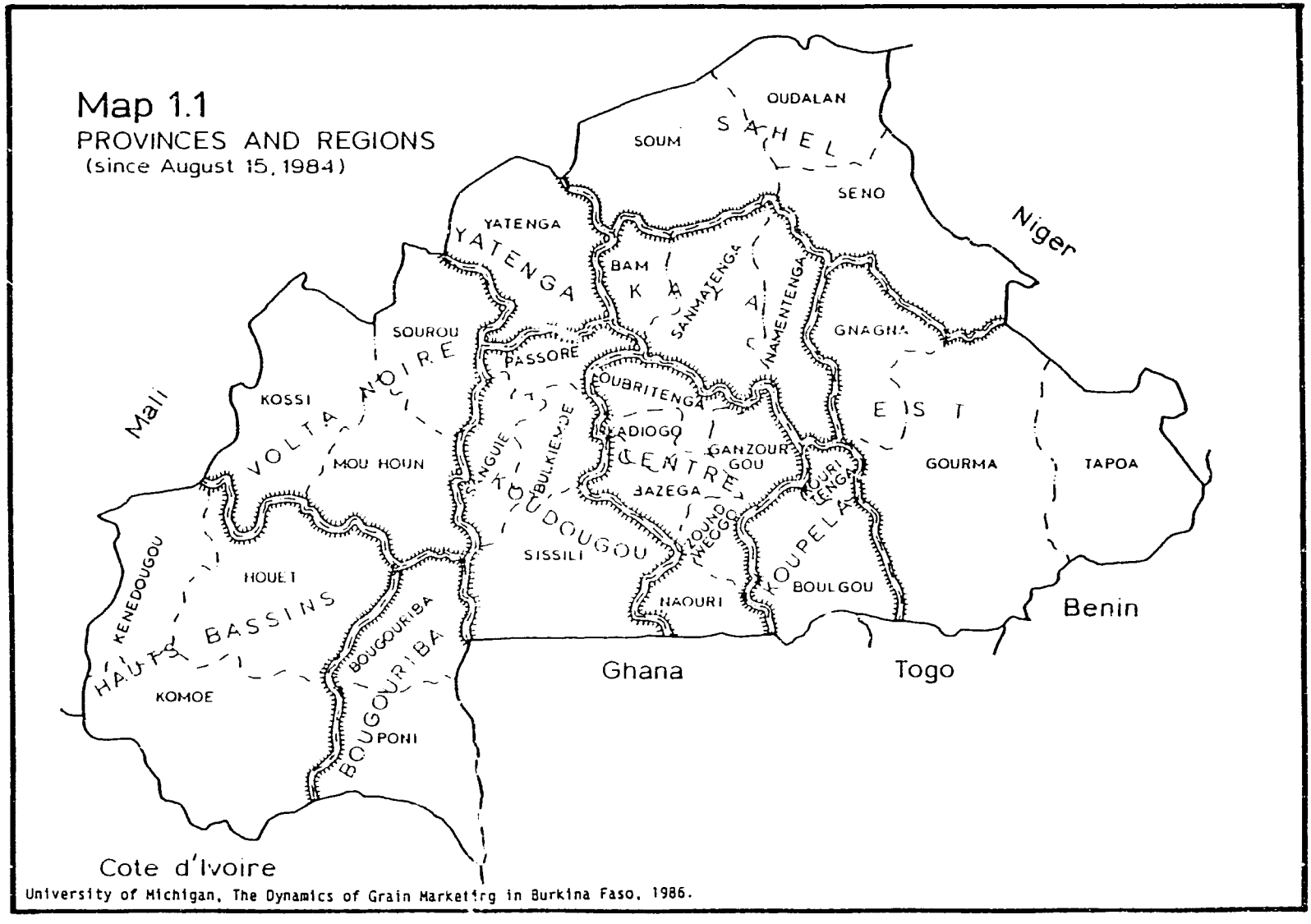
[1]Before 1984 Burkina Faso was divided into ten administrative districts (départements). Now there are thirty provinces. Production regions, decentralized units of the Ministry of Agriculture and Livestock, corresponded to the départements.



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

common occurrence in urban and rural areas alike.

These conditions have increasingly attracted official attention and concern. In Burkina Faso and neighboring countries one response has been attempts to stabilize prices of staple foods through both fiat and direct intervention. The government sets official buying and selling prices annually. The Office National des Céréales (OFNACER), a parastatal organization, once given a monopoly and now operating parallel to the private sector, buys and sells foodgrains at official prices. In general these efforts to stabilize prices and improve the efficiency of the marketing system through direct government intervention have met with little success. Prices continue to rise above official levels when supplies are low, and only imported food aid has prevented the occurrence of serious shortages. These government programs make significant demands on scarce resources, most notably administrative and managerial skills, and on government revenue.

In the face of the discouraging results from public sector intervention, the attention of governments and donor agencies alike has turned to the private sector. The current study of grain marketing in Burkina Faso is an outgrowth of this renewed interest in the role that the private sector might play in furthering national objectives. The change does not represent abandonment of public sector involvement in marketing. Rather, it reflects a growing realization that i) the private sector continues to perform important functions in grain distribution despite years of official disdain and nonrecognition; and ii) government fiscal and managerial resources are overcommitted and heavily dependent upon donor largess. GOBF explicitly seeks to make progress toward realization of national objectives while reducing dependence upon donors. Thus it is considered essential that programs be designed to mobilize effectively the resources of the private sector at village and national levels in pursuit of national objectives.

The relationship between the government and the private sector grain marketing network has tended to be adversarial in nature. Each side has regarded the other with distrust. Government officials often view large price fluctuations and episodic shortages as reflections of the inefficiency, malfeasance, and avarice of private traders. Private traders feel that government regulations including price controls are, at

best, an annoyance. At worst, they make it unprofitable for anyone, in the private or public sector, to perform vital marketing functions (such as long-term storage and distribution to remote areas).

Current policy is based on the belief that if marketing activities are left to the private sector, producers will be paid too little for their grain and consumers will have to pay too much. It is thought that the private sector provides grain at unnecessarily high prices and does not provide grain to areas where distribution is expensive.

Current programs may be based upon questionable assumptions about the causes of specific problems. Indeed, a major part of the difficulty may lie in the present pattern and trend of foodgrain production in Burkina Faso rather than in any malfunctioning of the private marketing system.

1.2. STUDY OBJECTIVES AND METHODOLOGY

A marketing system provides a link between producers and consumers. In functional terms this includes all aspects of redistribution of the product: sale and purchase at various levels, storage, transportation, processing, standardization, financing, risk-bearing, and market intelligence. The system is at least three-dimensional. It links economic actors, time and geographic space.

Economic theories of market behavior begin from the assumption that what society wants from producers of goods and services is good performance. This must include the meshing of the following elements:

1. The system should handle and distribute goods at the lowest cost consistent with technological and political conditions, and in accordance with producers' and consumers' desires and ability to pay for marketing services.

2. The marketing system should direct commodity flows from producers willing to sell to consumption markets where prices reflect a margin consistent with the first criterion of minimum cost for handling and distribution.

3. Prices should serve the economic function of allocating resources to their most productive use, such that true costs of production are reflected in consumer prices and that producer prices adequately convey consumers' willingness to pay (Herman, 1981, p. 82).

4. The system should help meet the social and economic goals of a country's development strategy.

Achieving these goals implies allocative efficiency -- the standard against which economists measure performance. It is difficult, however, to determine the extent to which these goals are met by a particular system.

We approach the grain marketing system as a network or subsector. The subsector approach provides the framework for the analysis, emphasizing an understanding the role of the institutions and participants involved in the subsector, their relationships to each other, and their effects on market behavior. The structure-conduct-performance paradigm (SCP) is used to analyze the horizontal levels of the subsector. To study the vertical relationships, we focus on understanding how the links between different markets and participants operate.

The SCP paradigm posits causal links between market structure and market conduct and between market conduct and market performance, where:

1. Market structure is defined as those aspects of the market organization that influence the nature of competition and pricing.

2. Market conduct is the method used by a firm to adjust to the markets in which it operates. These include the methods of price formation, sales promotion and co-ordination, and the degree of predatory or exclusionary tactics used against existing or potential rivals.

3. Market performance is the economic results of the structure and conduct of the market, specifically the relation between distributive margins and the costs of producting marketing services (Scherer, 1980).

The SCP theory proposes that certain market structures will lead to particular conduct by participating firms, and that a certain type of conduct will cause an industry to perform in a particular way. It analyzes the performance of an industry within the context of a set of basic supply and demand conditions which reflect the level of technology, people's tastes, and specific attributes of the product or production process.

The way the grain marketing system functions is the result of the behavior of many individuals in many places, all making decisions at the same time. The premise of our research design is that in order to understand how the system functions, it must be examined from the

perspective of all of its participants. The decision makers operating in the marketing system fall into three categories: producers, consumers, and all types of traders and other intermediaries. Thus, the major components of the research program were: a study of the national and regional markets, focusing on the behavior of intermediaries; a study of the behavior of producers in surplus and deficit zones; and a study of consumer purchasing behavior, focused on urban areas.[2]

These three integrated parts of the overall project were designed and implemented by an interdisciplinary team of researchers. Given this interdisciplinary approach of the research effort, multiple research methodologies were employed to garner the necessary qualitative and quantitative data in all three parts of the project.

1.2.1. The Marketing Network

This component focused on all aspects of marketing between the producer and the consumer. A reconnaissance survey was carried out in most regions of Burkina Faso. A first set of general questions was asked of a variety of market participants. In selected areas these were followed up by more intensive interviews with particularly cooperative key informants to obtain information about more sensitive aspects of the trade. A third pass was conducted in selected areas to further refine and discuss hypotheses with key informants. These surveys relied on interviewer guidelines rather than formal questionnaires. All types of market participants were interviewed to obtain information about who exchanges grain, the relationship between intermediaries, the terms of exchange, the direction and magnitude of flows, and how the marketing network operates. Prices were collected in selected markets. The rapid

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[2]Most previous studies have focused on only one or two aspects of the marketing system. None has attempted to cover all levels of trade throughout the entire country. In trying to do so, we have also tried not to duplicate previous efforts. Where other researchers had already conducted extensive surveys we either tried to add recent data to their results (e.g. in the Eastern ORD) or collaborated with them and tried to incorporate their results and conclusions, as in the cases of SAFGRAD and ICRISAT.

reconnaissance methodology used for this part of the study is described in Appendix C. Volume II, Rapports Régionuax, presents the detailed results.

1.2.2. Producer Behavior

The village studies concentrated on understanding producer behavior vis-à-vis the market. The design of this component rests on the idea that households and markets are part of an integrated economic system, and that a proper understanding of the parts requires studying the behavior of producers and their marketing area. Data were collected from a sample of 250 households spread between five villages (three in a surplus zone and two in a deficit zone). The markets surrounding these villages were also studied to determine the specific market conditions in which producers made their decisions. Following a farm management approach, sample households were interviewed regularly throughout an entire year in order to obtain complete budget data on all aspects of the household economy. A more detailed description of the methodology is given in Appendix D.

1.2.3. Consumer Behavior

Research on consumer behavior was concentrated in the two major urban areas, Ouagadougou and Bobo-Dioulasso. Consumers and prepared food sellers in both cities were interviewed about their grain purchasing habits to determine the relative importance of specific urban marketing channels. This was the least developed part of the study. A description of the methodology is given in Appendix E.

1.3 PURPOSE AND OUTLINE OF THIS VOLMUNE

In keeping with the three-fold purpose of the study, this synthesis volume presents basic data on the marketing system, evaluates its functioning and makes recommendations for improvement. The results of the three component studies are presented in the body of this volume, Chapters 2 through 5. Supporting documents for the analysis are found in the appendices and in the other volumes, which are listed in Appendix A. Conclusions and policy recommendations are discussed in Chapter 6.

Chapter 2 gives an overview of grain marketing in Burkina Faso. The chapter begins with descriptions of typical marketing chains in the private and public sectors. Supply and demand for cereals are discussed, and the geography aspect of marketing behavior is described. This is followed by a detailed description of private and public marketing channels.

Chapter 3 focuses on market conduct, beginning with a description of the barriers to market entry. Competition among intermediaries and vertical coordination at all levels of the marketing chain are then discussed. This is followed by an analysis of prices and conclusions about market integration, marketing margins and seasonal price fluctuations. Finally, changes in the market over time are discussed. Much of the analysis presented in this chapter appears in more detail in Volume II.

Chapter 4 synthesizes the analyses of producer behavior which are presented in Volume III. Specific topics which are covered include: cereal security, grain disposal decisions, determinants of marketed surplus, and marketing behavior and interhousehold equity.

Chapter 5 treats consumer marketing behavior. Data from surveys of consumers and prepared food sellers are presented. The analysis leads to conclusions about the importance of various channels for meeting consumer demand.

Chapter 6 begins with a review of the results and conclusions of the research program. Government policy objectives are then reviewed. The report ends with a discussion of options for improving the marketing system based on the preceding analysis.

Our results confirm some aspects of the conventional wisdom and refute others. In assessing the results for use in policy formulation, it is essential to recognize the nuances which do exist and to consider past experience when projecting the potential impact of policy reforms.

Perhaps the major strength of this research lies in the fact that it covers the entire country. We have placed much emphasis on comparisons between regions and socioeconomic groups. The differences between groups, regions, types of markets, etc. are the key to

understanding how the system functions. Burkina Faso is not a uniform environment. For policy to be effective it must be formulated to work within a diversity of settings.

CHAPTER 2

AN OVERVIEW OF THE MARKETING SYSTEM

Understanding how the grain marketing system functions will help to identify the constraints to more efficient operation. This chapter presents basic information about the national and regional marketing systems. It begins with a brief history of grain marketing in the Sahelian region. This is followed by case studies of major marketing chains to illustrate the dynamics of the marketing process as well as the variety of marketing arrangements. Section 2.3 then summarizes regional supply and demand to give a broad-brush historical picture of the grain balances for each region. Section 2.4 describes marketing activities throughout the country to answer the questions: where are the different supply and demand centers? and in what directions does trade flow? Section 2.5 discusses the different market channels, both private and public. More detailed information about each region can be found in the Rapports Régionaux (Volume II).

2.1 HISTORICAL DEVELOPMENT OF THE GRAIN MARKETING NETWORK[1]

The grain markets in the Sahel developed after World War II and acquired their present configuration following the political independences of the late fifties and early sixties. Two critical developments that shaped them were the growth of major cities, and the events relating to the drought of 1972-73. Despite the impact of recent events these markets contain elements innerited from an older period. This section presents a brief sketch of this history with regard to Burkina Faso as an introduction to a description of the present marketing network.

West African long-distance trade has captured the imagination of observers, native and foreigner alike, for numerous generations. What is less often evoked is the existence, alongside it, of short-distance exchanges, within or between villages, that were encouraged and facilitated by long-distance trade. In territories where the relationships

[1]This section is excerpted from Saul's research report (Volume IV).

between localized communities were relatively peaceful and market places were institutionalized (such as in the Mossi Kingdoms), such transactions took place within them. Where relationships between local communities were marked by the frequent eruption of violence (such as the western part of what is now Burkina Faso), they largely depended on the existence of a network of travelling traders.

Prior to World War II grain was one of the commodities that entered such short-distance trade. The demand for grain was created on the one hand by the important activity of beer brewing (Heritier, 1975) and on the other by sporadic local deficiencies in food and seed grain resulting from microclimatic variations as well as by differences in the productive capacities of households. Some ethnographers have documented a deep-seated cultural inhibition against the sale of foodstuffs in various parts of West Africa, which has occasionally been interpreted as an indication that the grain trade started only when the destruction of precolonial organization and ideologies made it possible to overcome the reluctance to sell. In reality, prohibitions concerning the sale of foodstuffs usually apply only to the collective stocks of organized farming groups. Outside of this framework there often also exists a domain of individual production. The product of this individual effort usually found its way into the local market.

It is well known that in the area around present-day Bobo-Dioulasso Mandé traders known by the generic name Jula engaged in long-distance trade. Local exchanges were in the hands of a much more imperfectly described group, the Zara.[2] Unlike the Bobo, historically the Zara have given evidence of political ambitions.[3] By frequent travelling, Zara men and women maintained a network of systematic barter

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[2]The Zara speak the same language as the Bobo, the majority farming population in the areas they inhabit. The language is incomprehensible to Jula-Bambara speakers even though it is of Mandé origin. But set the Zara themselves off from this farming population by using varient cultural traits (such as in the use of dress).

[3]They dominated the village of Sia (one of the two nuclei of Bobo-Dioulasso), but groups identifying themselves as Zara were scattered throughout what are now the provinces of Houet, Kossi and Moun-Houn (the former départments of Hauts-Bassins and Volta Noire) (Le Moal, 1980:16-27).

and exchange, using cowrie shells and other currencies when possible. Their mobility was facilitated by the success of a quasi-state apparatus imposed south of the Volta River by one of the clans in Sia in alliance with or under the subordination of princes belonging to the Watara Jula of Kong.

The trade was typically conducted in the following manner: Zara women traders would establish themselves in a village and associate themselves with a man who had settled there as a representative of the dominant Zara clan in Sia. In this village the women spent a good portion of the year by themselves, exchanging small quantities of grain for dried fish and salt (part of which was of northern origin and derived from long-distance trade) or other condiments processed from local inputs, and brewing and selling beer and other alcoholic beverages. They lived off the income generated by such activities, and apparently they often contributed to the sustenance of their men with it. They operated in this manner in a number of villages (where they had links through kinship or affinity) throughout the year, periodically transporting some of the accumulated commodities from one place to another to take advantage of relative scarcities.

The colonial administration introduced a new element in exchanges of grain. First it established a stable demand for troops and an initially weak but growing administration. Then it brought the local population into the realm of European currency through taxation and wage labor (army recruitment, public works, and employment in private enterprises). Finally, it provided political and institutional support for the establishment of large import-export companies which completed the articulation of the local economy with the West European market.

In the 1940s the territory of what is now Burkina Faso was covered by six big companies,[4] which had trading posts in the 12 districts of the colony and which conducted 75 % of the import trade and 100 % of the export trade (Bollinger, 1974, p. 18). The export trade consisted of

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[4]The six were: C.F.A.O., S.C.O.A., Peyrissac and Co., C.I.C.A., C.A.M.I.C.O. (a subsidiary of C.A.C.O.M.A.F.), and the French Niger Company (a subsidiary of UNILEVER).

collecting oil products; most importantly shea nuts,[5] but secondarily peanuts and sesame. Shea nut export remained important throughout the period of independence and is today a vital element in the national balance of payments.

In this period the sector of commerce that was left to African merchants included trading kola nuts, condiments, foodstuffs and livestock. Groups often having an ethnic basis controlled these activities (mostly Yarse and Hausa in the center and east, Jula and Zara in the west). From such groups originated that most of the members of the commercial elite which emerged in the following period. Several traders in Bobo-Dioulasso and Ouagadougou who were interviewed either had a parent who engaged in such precolonial trade or in their boyhood served as an apprentice with somebody who had a similar background.

In the 1940s privately owned trucks became available and created the possibility of engaging in a (largely illicit) trade with Ghana and Nigeria. Animals were taken to these countries and consumer goods brought back. This was made all the more profitable by the barrier between the British and French monetary zones.[6] The beginnings of a few of the largest commercial fortunes of today lie in the activities of this period.

The dendritic system that the European companies established for export crops spawned the channels that are responsible for the flow of both grain and export crops today. The European companies were only marginally interested in cereals; but they were buying some to supply the military camps and the civil administration. They even had some surplus which they sold in cities. This allowed a few men to enter the retailing business by purchasing from them in bulk and selling in the city marketplace, an activity dominated by women until that time.

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[5]Shea nuts are collected from an unplanted but protected tree (Butyrospermum parkii); they have to be freed from the flesh of the fruit, dried by fire and shelled before sale, an activity exclusively in the domain of women.

[6]For an account of an early incidence of such trade during World War I see Bâ (1973), Chapter 5, pp. 68-76.

The export of oil crops reached one of its climaxes right after World War II but started to decline in profitability after 1952, partly because of world market conditions, and partly (probably more largely) because of the enforcement of new regulations concerning the employment of labor in French West Africa (Coquery-Vidrovitch, 1975).[7] The companies first attempted to transfer the trading posts to their former managers, and when this failed they started to collaborate with the local merchants whom they had previously seen as their competitors. By the end of the 1950s they had totally withdrawn to the centers of Ouagadougou and Bobo-Dioulasso. The collection of export crops was assured by a system of agents who operated with cash advances from the exporting companies.

As these developments were taking place the two main cities were also growing rapidly. Their population was increasing at the same time as the amount of grain produced by their resident population was falling because of higher densities. The colonial administration speeded up this process by closing large areas to farming in order to develop them as urban neighborhoods.[8] When urban demand became significant the agents for expatriate companies started to purchase cereals and products such as locust beans[9] on their own account. By that time some of them had accumulated enough money to finance such side occupations themselves but the funds provided by the European companies were still helping them to diversify their endeavors.

Most of the large merchants interviewed came to the cities in this post World War II period; many of them started as export crop collection agents, while others were doing something else but added export crop

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[7]The regulation introduced pay by the hour, minimum wages, social security, all supported and monitored by active labor unions, and resulting in a smaller gap between colonial and metropolitan wages.

[8]Colonial administrators parcelled out large zones which today are the business districts of Ouagadougou and Bobo-Dioulasso by tracing wide streets and sometimes removing the previous inhabitants by force. Some farming areas in the vicinity of cities were closed for other reasons. For example, the Dinderesso area, where the farms of the people of Tounouma in Bobo-Dioulasso were situated, was declared a protected forest.

[9]Seeds of Parkia biglobosa for which there is a local use.

collection to their activities. Some of the most successful combined several of these activities. Trade with the British zone continued to be very lucrative. In this period small one-ton vehicles became available for sale, making it possible for Burkinabè entrepreneurs to go into the business of transporting passengers and goods. Some opened beer-dispensing bars. With such combinations it was possible to consolidate the moderate fortunes that came into being in the preceding period.

As is the case elsewhere (for example in Senegambia, see Appleby, 1985), European export-import companies could not survive national independence, but apparently for very different reasons. Around the time of independence, agents of companies in Abidjan initially, then brokers working for competitors in Europe started to infiltrate the thus-far protected enclave in search of export crops. They tried to coopt the African agents of the locally established companies, or convince other wealthy merchants to collaborate with them. The transfer of political power to national elites further enhanced the possibilities open to local businessmen. Especially in Bobo-Dioulasso one observed the rise to prominance of a new group of Mossi (most of Yarse origin from the provinces of Yatenga and Passore) at the expense of the older strata of Jula and Zara origin.[10]

A few years after independence the established European companies totally abandoned the export business. In the sixties and early seventies some of these companies and many small enterprises which belonged to individual Frenchmen merged with each other or stopped operating altogether. They also sold off huge tracts of real estate in the commercial sector of the city to rising local businessmen helped by large bank loans.

The military government that came to power in 1966 established a marketing board (Caisse de Stabilisation) and initiated short term loans to further stimulate the Africanization of the export crop sector. The BND (National Bank of Development, in which the government has a 55%

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[10]The mobility made possible by these propitious conditions of trade and accumulation is so remarkable that some individuals who started in the late 1950s with one small vehicle own now a fleet of semi-trailer trucks.

interest) took the leadership in providing low-interest, short-term "Buying Campaign Loans". The other major banks of the country, all of which have some government participation, followed suit. These loans obviated the need for African merchants to affiliate themselves with European importers for lack of capital. The combination of these with other general business loans gave unprecedented financial power to some individuals. A few of the merchants interviewed hinted that political connections were vital in obtaining these loans. Two of the most important grain merchants of Jula origin in Bobo-Dioulasso declared that they never had any loans, in one case despite numerous attempts. This stands in contrast to some other cases, for example that of a prominent businessman interviewed in Ouagadougou whose outstanding loan balance was said to be around 500 million FCFA.

The trade in cereals gradually acquired an importance close to that of export crops. According to traders' accounts, the great boost to it was the 1972-73 drought. They also maintain that since the drought northern provinces that used to sell some grain to the capital, such as Yatenga, Passore, and Sanmatenga, appear always to be in deficit. This situation created a further need for inter-regional trade.

Today the channels that extract export crops and those that bring grain to the city are the same. At the lowest level the same personnel are involved in both. Buyers in village markets collect everything, sometimes on behalf of two different people. For example, they buy export crops for an employer and grain for themselves, or in some other combination involving a host of village products such as fowl, small ruminants, condiment plants, and honey. There are some differences in organization between oilseed and food crops at higher levels, because export commodities are progressively bulked and remain at the export points of Ouagadougou and Bobo-Dioulasso. In contrast, grain goes through an intricate set of loops, bulking and unbulking in its movement toward the consumer. At the level of the largest merchants and at that of city retailers one can see some specialization in export crops and in grain respectively. This is due to the fact that the most important national merchants prefer to deal in larger amounts and have relinquished the trade of grain, or engage in it only under special circumstances, while the retailers face a much larger demand for cereals than for any

other agricultural product. At most other levels, specialization is weak and most traders deal with several kinds of foodstuffs and export crops, often favoring one or the other depending on the season and the condition of the market.

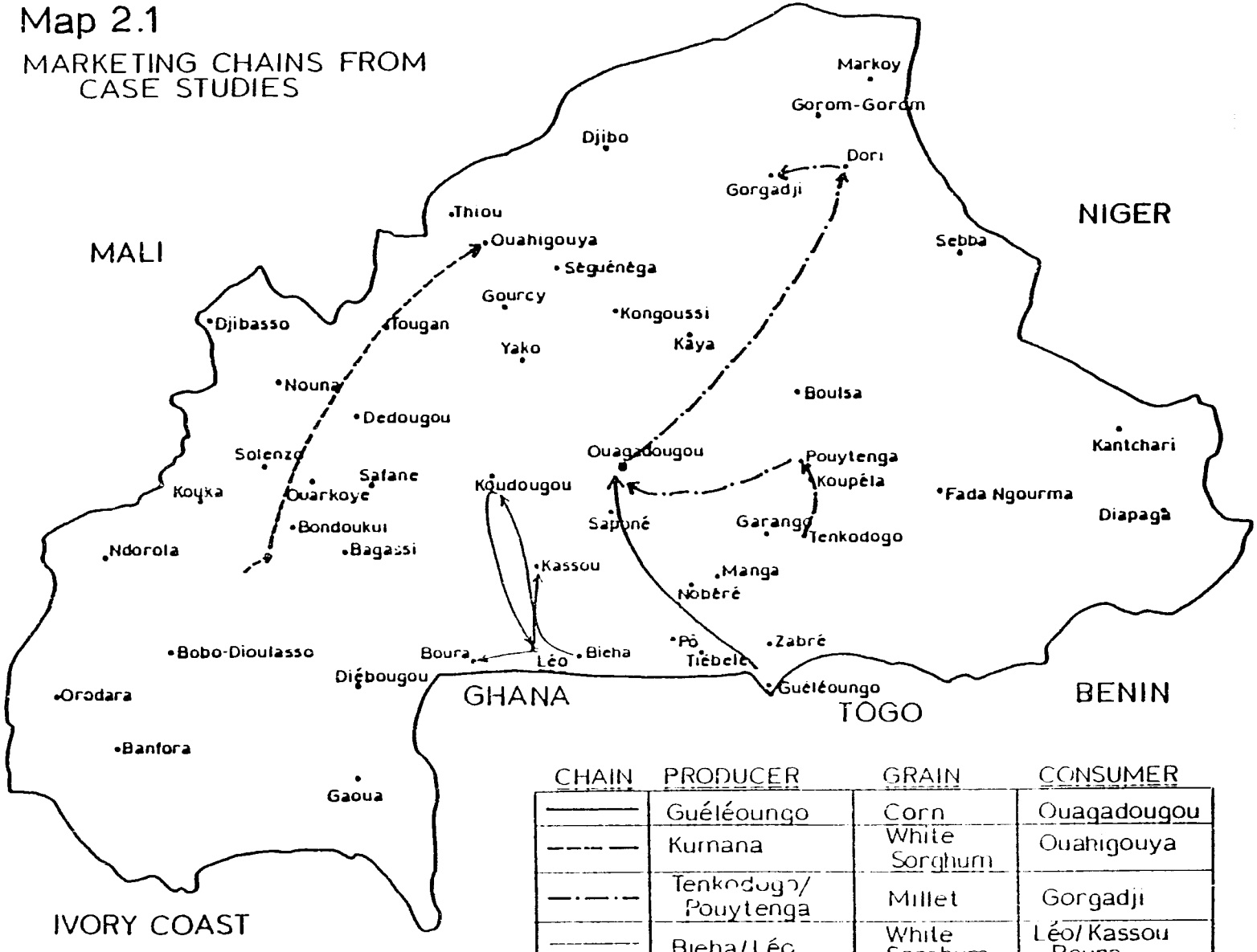
2.2 CASE STUDIES OF TYPICAL MARKETING CHAINS

The case studies presented in this section are meant to illustrate the dynamics of the grain marketing system. There is such a variety of intermediaires, transaction terms, types of markets and combinations thereof that it is difficult to have perspective on the importance of particular channels or marketing arrangements. These case studies were developed to highlight the major characteristics or relationships in the marketing channels which after careful analysis we deem to be economically significant. The four case studies illustrate the four major or typical marketing chains which we have identified: three private sector and one public sector channel. The choice of particular regions, traders and intermediaries is meant only to provide examples. The chains can exist in any area with appropriate geographic and marketing characteristics. Although the reader is free to skip this section and proceed directly to 2.3, we do refer back to the case studies throughout the chapter.

Four different bags of grain, originating in different regions, are followed to their final destinations. The main distinction between the four examples is the number of intermediaries involved in the chain, the type of commercial relationship between them, and the speed of distribution. Map 2.1 shows the path which each bag follows. The first, a bag of corn, travels from Guéléoungo, south of Ouagadougou on the Ghanaian border, to a Ouagadougou consumer. The second, a bag of white sorghum, leaves from a village around Kumana (south of Dédougou) and goes all the way to Ouahigouya. The third, a bag of millet, originates with a producer in the Tenkodogo area, and after a stop in Ouagadougou, goes to Dori and finally reaches a consumer in Gorgadji. The fourth, a bag of white sorghum which travels through public sector channels, originates with producers in Bieha near Léo, is transported to the OFNACER warehouse

Map 2.1

MARKETING CHAINS FROM CASE STUDIES



CHAIN	PRODUCER	GRAIN	CONSUMER
———	Guéléoungo	Corn	Ouagadougou
— — —	Kumana	White Sorghum	Ouahigouya
—·—·—	Tenkodogo/ Pouytenga	Millet	Gorgadji
- - - -	Bieha/Léo	White Sorghum	Léo/Kassou Boura

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1985.

in Koudougou, and then returns to Léo to be sold to consumers in Kassou or Boura. Figure 2.1 summarizes the four case studies.

2.2.1 Corn from Guéléoungo to Ouagadougou

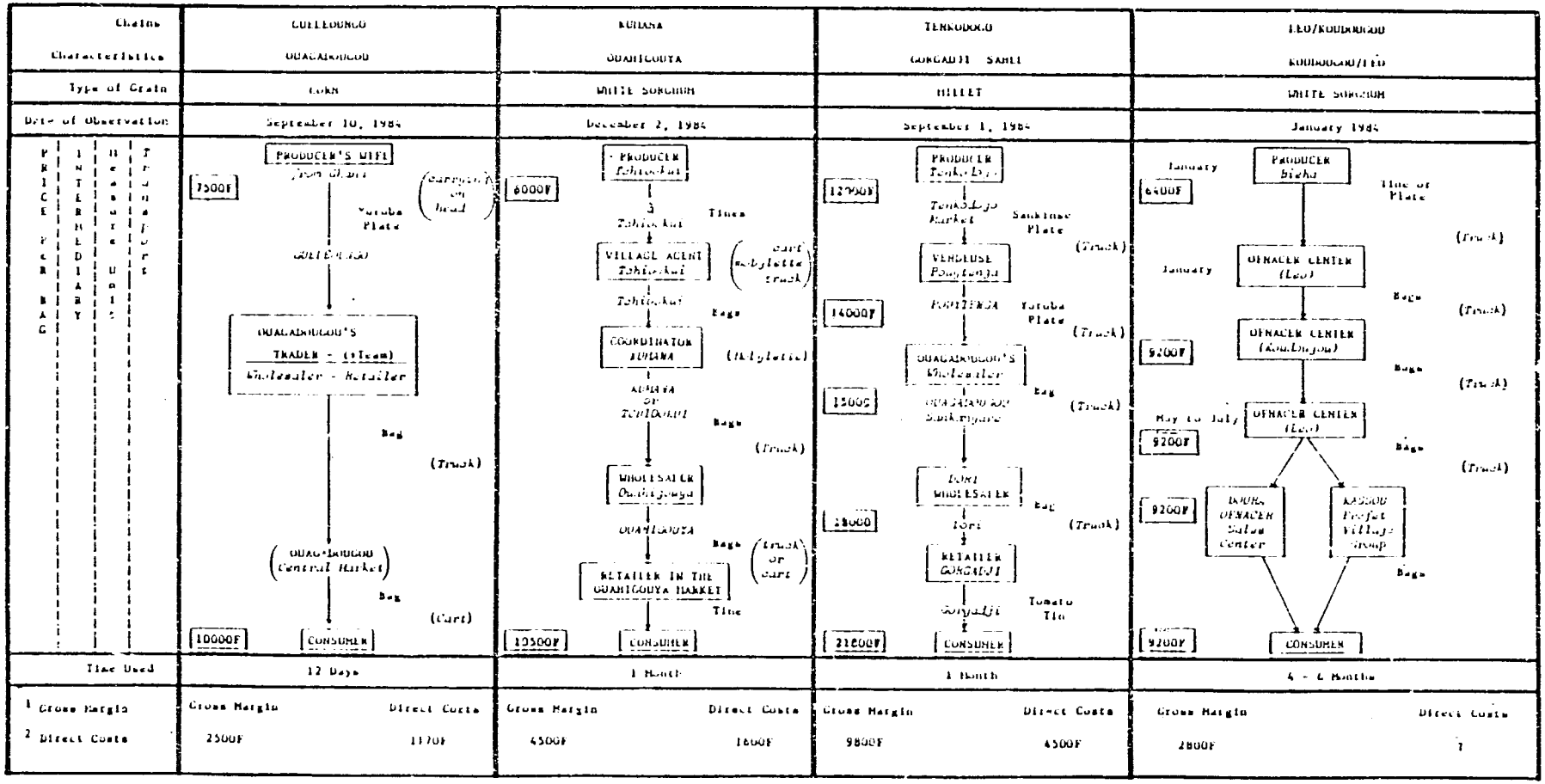
September 10, 1984 is market day in Guéléoungo, as it is every third day. Many producers' wives are bringing grain from their compounds to sell. Today Fatimata brings corn from her compound. Her husband, like many in the surrounding area, needs money to pay for a funeral. She knows that many traders from Ouagdougou will come with their trucks to the market. Each of them will try to attract her grain. She will sell her two tines (a tine holds about 16 kg; see Table 3.2) of corn directly to one of them, using the yoruba plate (a local unit holding about 2.5 kg) which she brings for measuring. The trader's brother tries unsuccessfully to use his own, slightly larger sankinsé plate for measuring. Since the trader is in a hurry to collect as much grain as possible, he offers a better price than what the local traders offer on nonmarket days. She gets 185 FCFA for each plate. Actually, everyone in the Guéléoungo market is paid in cedis (the Ghanaian currency) at the rate of 200 cedis for 625 FCFA.

From all the paths around the market, other women, hundreds of them, are bringing their grain in headloads. With the help of the measurers the trader will quickly fill his 40-plate bag with corn. A specialist will then sew up the bag and assistants will load it onto a truck. On this 7-ton Isuzu truck, atop the 100 bags of grain, 45 traders and assistants (and occasionally some other passengers) take their places for the return trip to Ouagadougou, where they will arrive around 11 p.m. The next morning our trader's grain is unloaded at the central market, where he has his boutique, while other traders are taking their grain by cart to their own stores. So far our trader, "El Hadj," has paid 7500 FCFA for the sack of grain, plus 200 FCFA for the used bag; 5 FCFA for sewing it up; 115 FCFA for measuring (both paid in cedis); 750 FCFA for truck transport; and 100 FCFA for loading and unloading the bag from the truck. Marketing costs total 1170 FCFA. Thus, the direct cost for the bag of grain is about 8670 FCFA, plus possibly a small amount for gifts to customs agents along the road.

The bag will sit in the store for awhile since it was not among the 50 bags El Hadj just sold to a retailer at 9500 FCFA/bag. Twelve days

Figure 2.1

MARKETING CHAINS FROM CASE STUDIES



[1] Gross Margin = Price at Final Sale - Price at First Sale

[2] Direct Costs per bag = Fees for transport, empty bags, and loading.

University of Michigan, he Dynamics of Grain Marketing in Burkina Faso, 1986.

later it is eventually sold at 10,000 FCFA to a consumer who can afford to buy the entire bag. It is then transported to the consumer's compound in Gounghin, making it worth 10,300 FCFA at the consumer's gate. Later the corn is threshed for 1200 FCFA/bag and ground into flour for another 750 FCFA/bag.

The civil servant who buys the grain has always bought from El Hadj, with whom he has a revolving credit arrangement. He pays for last month's grain when he picks up this month's bag. He knows El Hadj well and is confident that the bag he is choosing contains the correct amount of good quality corn, though he never measures it.

Since the time our bag left Guéléoungo, El Hadj has probably returned there at least four more times. Many more bags of corn have travelled along the same chain.

2.2.2 White Sorghum from Kumana to Ouahigouya

Amadou Ouédraogo, who works in Kumana, has just received extra money from his boss in Ouahigouya to buy grain on his behalf. Today is December 2 and the several million he had originally been given by his boss for his first reconnaissance trip is almost exhausted. It would be very inopportune for him to run out of money now. Many producers have finished harvesting and almost all of them are selling two or three tines of grain right now. Some are even selling several bags because they need a large sum of money. When Amadou sent the request for more money with a transporter three days ago, he specified the current price for each of the products he usually buys. Amadou was expecting the money to be sent with instructions about what to buy.

Amadou had spread the "millions" among his local agents who are based in a number of villages including Tchiookui, Ouarkoye and Bondoukui. They buy for him since he cannot cover the entire region by himself and he needs to buy as quickly as possible. For each bag that he collects, Yssouff, the local agent in Tchiookui, receives 100 FCFA commission from Amadou, regardless of the type of grain or product. Amadou himself will receive 250 FCFA per bag from his boss Salif.

Amadou has now received the extra money he requested, along with Salif's authorization to pay 100 FCFA more per tine. This will allow him to compete with the newcomers from Ouagadougou and Bobo-Dioulasso, and with the local village groups. Today he will leave for Tchiookui to

check and record Yssouff's transactions from last week and to give him more money. Amadou is lucky to have been given a mobylette by Salif, though he would prefer it if he did not have to pay for the gas out of his own pocket.

Yssouff knows that Amadou usually comes to see him every Friday, the market day in Tchiookui. He really needs more money because he used almost all he had to buy three bags of white sorghum from a fellow producer. His neighbor needed cash to repay a debt to a relative and knew that Yssouff had money to purchase grain. Yssouff bought the grain for 1000 FCFA per tine. Since he was able to use his own measuring container, the same one used by other local traders throughout the region, each tine he bought was really good (full). As a result, the bags of six tines weigh more than 100 kg apiece. He has already collected 20 bags. Next week Salif will probably send a truck to Tchiookui to pick up the white sorghum and peanuts which Yssouff has bought.

Salif will rent the truck in Ouahigouya, a 7-ton Isuzu, for 90,000 FCFA. It will carry his own grain, plus some for other traders if there is room. It usually also carries five or six passengers from Dédougou for 2500 FCFA each.

Salif knows that he will sell some of his bags to a retailer in Ouahigouya who is already waiting for them. This merchant rarely sells an entire bag at a time. He prefers to sell by the tine -- the Ouahigouya tine (14 kg), which is much smaller than the one used in Kumana. He will refill the bags he buys from Salif so that they each contain six of the smaller tines. He will get 1750 FCFA/tine. It will probably take a long time for the retailer to sell his stock since right now the demand in Ouahigouya is relatively low. If Salif doesn't sell too many bags on credit, he will be able to get his money back quickly and will then be able to send more money down to Amadou.

2.2.3 Millet from Tenkodogo to Gorgadji

This year September is the hardest time of the hungry season (*soudure*) because the 1983-84 harvest was bad in Burkina Faso and grain prices are very high, particularly for millet, which is very scarce. On September 9, 1984, Ousmane leaves with many other traders from the Sankariaré market in Ouagadougou for Pouytenga, where the market takes

place every three days. Ousmane has a large warehouse next to the Sankariaré market. He buys at least 5000 bags a year, mainly in the east but also in the south and in the Volta Noire. Ousmane prefers to resell his grain as quickly as possible to retailers in Ouagadougou or to wholesalers or retailers coming from Kaya and Dori.

Aminata, a vendeuse, has been selling in the Pouytenga market for a long time. She is used to going to the Tenkodogo area to buy grain from the farmers in the markets there. Two days ago she went to the Tenkodogo market and bought millet from producers at 300 FCFA per plate. She paid 350 FCFA to transport each of the 5 bags she bought back to Pouytenga in a pickup truck.

As soon as Ousmane and his colleagues arrive at the market, they begin to buy grain. Ousmane bought Aminata's millet, by the plate as usual, at 350 FCFA per plate, the going rate for the day. This time she was lucky to be able to sell everything she had to the Ouagadougou traders, because they usually buy from the bigger traders in Pouytenga. Except for the largest traders, they all sell by the yoruba plate, counting 40 plates to a bag. The price of the plate is the same for everybody on market day. However, when Aminata cannot sell everything to the Ouagadougou traders, she must resell to the bigger traders in Pouytenga at a slightly lower price: 325 FCFA per plate. Everybody knows that Aminata, like all the other vendeuses (women sellers), uses the sankinsé plate (a larger one) for buying and the yoruba plate for selling. They are so skilled at measuring, regardless of the transacting partner, that they are able to get a little profit from each transaction even if they must buy and sell at the same price! In Tenkodogo it is sometimes hard for traders to compete with the women because the latter are always able to offer the producer 10 FCFA more per plate.

At the end of the day Ousmane trucks his bags back to Ouagadougou for 350 FCFA each. One of the bags of millet he just bought will be stored for a week or so and then sold along with a few others to a Dori trader, Rasmane, for 15,000 FCFA. Ousmane plans to stop going to Pouytenga until the price drops when newly harvested millet arrives from Togo.

In mid-September the road to Dori is almost impassable. The transport cost for one bag is very high, 1750 FCFA. In addition to transportation, there are the costs of the used bag (200 FCFA) and the

cost of loading and unloading the truck each time it gets stuck in the mud (100 FCFA each time). This time Rasmane does not have any problems. He only has to pay 100 FCFA for handling each bag, as did Ousmane. His millet arrives safely and quickly in Dori. He will sell some bags (including the one from Tenkodogo) only to a friend, Barry Salam, who is a trader in Gorgadji. Barry will pay 18,000 FCFA for the bag, less than the retail price in the Dori market. Barry will then have to pay 1400 FCFA per bag for transport and 100 FCFA per bag for loading and unloading. Since the bags have not yet been refilled, as they could have been if sold instead directly to Dori consumers, they still weigh about 105 kg each.

Once in Gorgadji, Barry Salam sells the millet by the tomato paste can (boite de tomate) or by small plastic bowl. He is able to sell about 60 tomato cans from his 105-kg bag (maybe one or two more if he uses a special can). At the end of September all Gorgadji consumers will be paying 350 FCFA for a tomato box of about 1.7 kg.

Alima needs millet but has no money to purchase it. She is related to Barry's family so she will be able to get one tomato can of millet on credit, to be repaid at the upcoming harvest. Because Barry knows her well, she will have to repay only 350 FCFA. If he were less confident about repayment he might be inclined to charge some interest. Just before Alima arrived at his shop, Barry sold a tine on credit to a farmer who promised to give him back two tines as soon as he harvested. Barry wonders whether the farmer will be able to repay if the harvest is as bad as it was last year.

2.2.4 White Sorghum from Léo to the OFNACER Center in Koudougou and Back to Léo During the Soudure

In January 1984, Oumarou, a local agent for OFNACER in Léo, had much difficulty getting grain from the producers in the region around Léo. The traders were aggressively buying for themselves or for Ouagadougou traders, leaving no chance for OFNACER agents or village groups to buy with the official measuring unit (the tine of 16 kg of white sorghum). Every time they tried to compete in the same place, the traders offered a slightly better price for the plate, the local unit of measurement. As a result, Oumarou had to go further, to Béun or Bieha, to get grain for OFNACER at the official price of 6400 FCFA a bag.

The sorghum that Oumarou collected in the Bieha market was shipped to OFNACER in Léo a few days later, where it joined all the bags that the village groups had been able to purchase on behalf of OFNACER. The village groups receive a fee for the grain they provide to OFNACER: 2 FCFA per kg or 200 FCFA per bag.

This season, the village groups of the region did a good job providing grain to OFNACER. Trucks from the OFNACER center in Koudougou went to Léo in order to collect it. While it is difficult to know how much it costs OFNACER to ship grain from Léo to Koudougou, the private transporters generally charge between 1000 and 1500 FCFA for such a trip.

The demand in Koudougou is going to be rather high this year because of the mediocre harvest in the region immediately surrounding Koudougou. Hence the Koudougou OFNACER manager is frustrated about the directive from the central office to spread his purchases around the region. He feels it will hurt his purchasing campaign. He knows that it would be more efficient to concentrate all his agents' efforts in the region's most productive areas like Zamo (which provided about one-third of the total purchases for the region last year), Fara, and Léo. He has also learned that collecting grain with the collaboration of village groups can cause problems. For example, a few days ago the Koudougou center received bags of grain from a village group in Léo that did not contain the correct amount. The group had filled the bags using plates, plastic cups or even small ladles.

OFNACER agents like Oumarou are supposed to purchase grain using the official tine without the "hat" (the cone of grain which forms when the receptacle is filled above the brim). But it is difficult for Oumarou, as it is for the village groups, to insist on using the tine without a hat if the producer, unaware of the rule or of the official tine, does not complain when he buys with the local tine (the "sceau 33", five of which can make a full bag).

The bags that Oumarou and his colleague Gabriel collected in Léo are also joined by a few bags delivered by local traders. The Haut Commissaire had asked the traders to provide grain. Many of them, however, did not sell to OFNACER. They argued that the OFNACER price, even with 4 FCFA per kg added for transport and 4 FCFA per kg added for

the cost of the bags, was not high enough considering the prices they had to pay to buy the grain from producers.

Oumarou's bags are stored in the Koudougou warehouse, which has also received supplies from Dédougou and Ouagadougou. After about four months the director of OFNACER and the authorities in Léo asked for grain to be shipped to their sales center. The bags that Oumarou collected in January thus came back to Léo in July.

The road between Koudougou and Léo is bad and sometimes is impassable at certain points during the rainy season. Private transporters charge about 1750 FCFA per bag for the trip at that time.

A few days ago, on July 23, the OFNACER sales agent in Léo sold his last bag. Today, July 26, people are continuously passing the OFNACER headquarters to check if the new load of grain has arrived. Once it does, the warehouseman will sell by the bag, not in smaller units. The consumer will have to present his carte de famille in order to buy, a procedure designed to help prevent traders from buying large quantities.

In May some of the bags which Oumarou bought from the producers in Léo were sold back to consumers in Boura for 9200 FCFA a bag. On the private market the price of grain provided by a trader, the only one able to store since the harvest, is around 12,000 FCFA per bag. It is more expensive when he sells by the plate, or when sold by the vendeuses who have gone to Ghana for supplies.

If there were more cereal banks in the region of Léo and they worked better, more grain could have been distributed in villages and in smaller units, as happens in the north of the Koudougou region or in the Yatenga or Dori regions. In Léo, as in all other regions, the prefect of the region can ask for a certain amount of OFNACER grain in order to satisfy local demand. Kassou, located between Koudougou and Léo, is the location of one of the centers which recently received 7 tons of grain as a result of that request. Yssouf, a farmer in Kassou, was therefore able to split a bag of grain from OFNACER with a fellow farmer. They each sold a sheep in order to get enough money for the grain.

The entire local population of Kassou as well as the civil servants rely on OFNACER for their grain. The Kassou cereal bank, financed by the Fonds du Développement Rural (FDR), was unable to collect grain this

year. Traders from Ouagadougou are not interested in coming to Kassou to sell during the rainy season because of bad roads and relatively low demand. This year the situation is so bad that the prefect sent an SOS to Ouagadougou and received some American sorghum from the World Food Program (PAM), but it will not last long.

Right now consumers in Kassou are reluctant to buy a large quantity of grain all at once. They feel that if they buy in smaller quantities they will not consume as much. They buy one or two plates of white sorghum at a time from the vendeuses at 350 FCFA each (the equivalent of 14,700 FCFA per bag). Some consumers try to buy on credit from one of the few local traders. Many are hoping for remittances from their relatives in Ouagadougou and the Ivory Coast. Very soon, all consumers from Kassou, including the ones coming 30 km by bicycle, will find the OFNACER storehouse empty and, as is often the case, will have to turn to traders or more successful farmers for grain.

2.3 SUPPLY AND DEMAND FOR CEREALS

Historical data on production and population show that national grain deficits are increasing. This means a greater reliance on imported food. The geographical pattern of production is also changing, with increased quantities of grain being produced in the south, which is less populated than other areas.

The amount of grain available annually is shown in Table 2.1, which gives figures for production by region, national imports, exports, and food aid, and the total grain available annually. Figure 2.2 illustrates per capita production, commercial imports, food aid, and food needs. Demand is shown in Table 2.2, which presents regional grain demand based on population data[11] and a 180 kg/person minimum consumption requirement.[12] Map 2.2 depicts the average deficit/surplus situation

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[11]Population figures are shown in Table B.1, and production per capita in Table B.2 of the Statistical Appendix.

[12]Haggblade (1984, pg. 52-54a) explains the use of different estimates of the minimum consumption requirement. We use 180 kg/person because it is the minimum requirement based on caloric need. Table B.3 shows what the grain needs would be if 192 kg/person were used.

TABLE 2.1

REGIONAL PRODUCTION, IMPORTS, EXPORTS, AND FOOD AID
1971-1983

Year	Center	Center East	Center North	Center West	East	Hauts-Bassins	Yatenga	Sahel	Bougouriba	Volta Noire	Total Local Production	Imports	Exports	Food Aid	Total[a] Available	Adjusted[b] Total Available
1971	136107	56780	123509	61953	73333	81457	58230	26151	102545	117113	837178	26375	534	0	737442	741184
1972	143858	59529	108210	77519	73812	73560	63300	19694	102652	115790	837924	5719	154	39000	756800	757596
1973	134600	54900	104800	100000	19100	73900	58200	20100	49700	98700	714000	41227	390	37000	684736	690765
1974	226500	52400	114700	153000	93100	124300	88200	43100	45800	94200	1035300	106106	78	95000	1061032	1096917
1975	169100	87100	125800	77600	93800	120600	95200	44400	69700	212800	1196100	31959	189	24000	1072454	1077173
1976	146962	61439	96070	78481	98871	89556	63904	42000	63568	172214	913068	35709	9566	23000	825250	826780
1977	169098	65854	117029	84066	106188	98044	71706	31214	66609	208640	1018448	64070	234	25000	954516	964033
1978	148873	64064	115738	105690	101260	138021	75585	52537	74523	177000	1053291	115399	125	88000	1098571	1115831
1979	181969	74295	103237	97411	107039	128390	66793	44086	79586	193770	1076576	99358	413	41000	1055034	1069773
1980	154209	81371	75888	86721	62650	128568	39309	45100	84682	153924	912422	88518	339	39000	902737	915879
1981	196351	80968	131572	110550	88453	138413	68925	67701	88453	175320	1146706	77321	109	38000	1089912	1101466
1982	186915	65150	88577	82230	89452	148389	53523	57300	88783	200750	1061069	n.a.	n.a.	56000	n.a.	n.a.
1983	165161	90938	86131	107459	84215	119903	5315.	37220	73833	175415	993426	n.a.	n.a.	39000	n.a.	n.a.

SOURCE: Bulletin de Statistiques Agricoles: Campagnes 1978-1979, 1979-80, 1980-81, 1981-82 and Campagnes 1982-83, 1983-84 and Haggblade (1984).

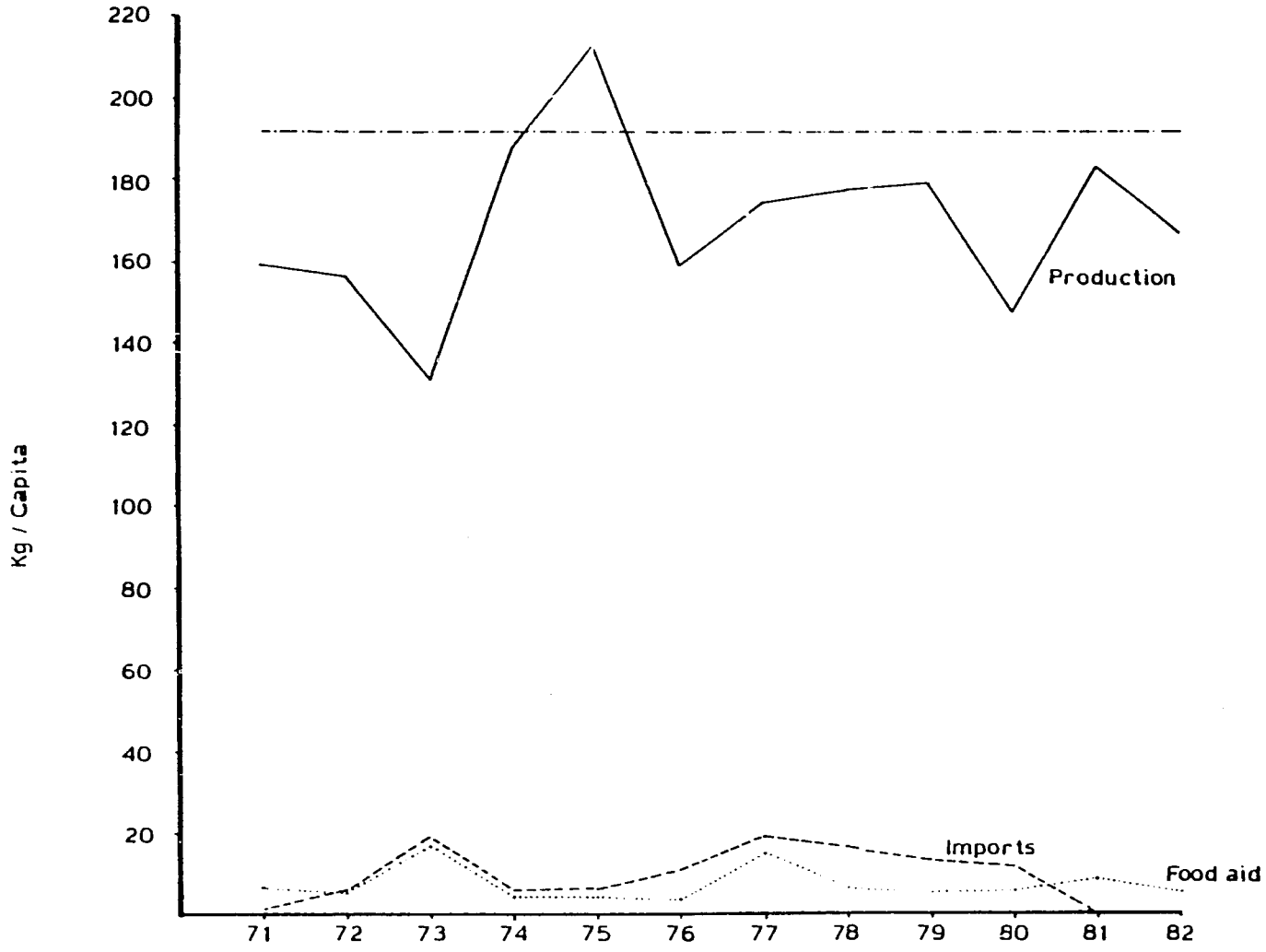
NOTES: a) Includes 85% of production plus imports and food aid, less exports.
b) Adjustment based on estimate that official statistics undervalue imports by 15% and exports by 40%.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Figure 2.2

PER CAPITA PRODUCTION, IMPORTS, AND FOOD AID 1971 - 1983

SOURCE: Bulletin de Statistiques Agricoles: Campagnes 1978-1979, 1979-80, 1980-81, 1981-82 and Campagnes 1982-83, 1983-84 and Haggblade (1984)



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.2

REGIONAL GRAIN NEEDS
1971-1983
(in kilograms)

Year	Center	Center East	Center North	Center West	East	Hauts-Bassins	Yatenga	Sahel	Bougouriba	Volta Noire	Total
1971	158580	68040	106200	132480	68400	97920	89100	59580	60120	106920	947340
1972	161460	69300	108000	134820	69660	99720	90540	60480	61200	108720	963900
1973	164340	70380	109980	137160	70920	101340	92160	61560	62100	110700	980640
1974	167220	71640	111960	139500	72000	103140	93780	62640	63180	112500	997560
1975	170100	72900	113760	142020	73260	104940	95400	63720	64260	114480	1014840
1976	172980	74160	115740	144360	74520	106740	97020	64980	65520	116460	1032480
1977	176040	75420	117900	146880	75780	108540	98820	66060	66600	118440	1050480
1978	179100	76680	119880	149580	77220	110520	100440	67140	67680	120600	1068840
1979	182160	78120	121860	152100	78480	112500	102240	68220	68940	122580	1087200
1980	185400	79380	124020	154800	79740	114300	104040	69480	70200	124740	1106100
1981	188640	80820	126180	157500	81180	116280	105840	70560	71280	126900	1125180
1982	191880	82260	128340	160200	82620	114840	107640	71820	72540	129060	1141200
1983	195120	83700	130500	162900	84060	120420	109440	73080	73800	131400	1164420

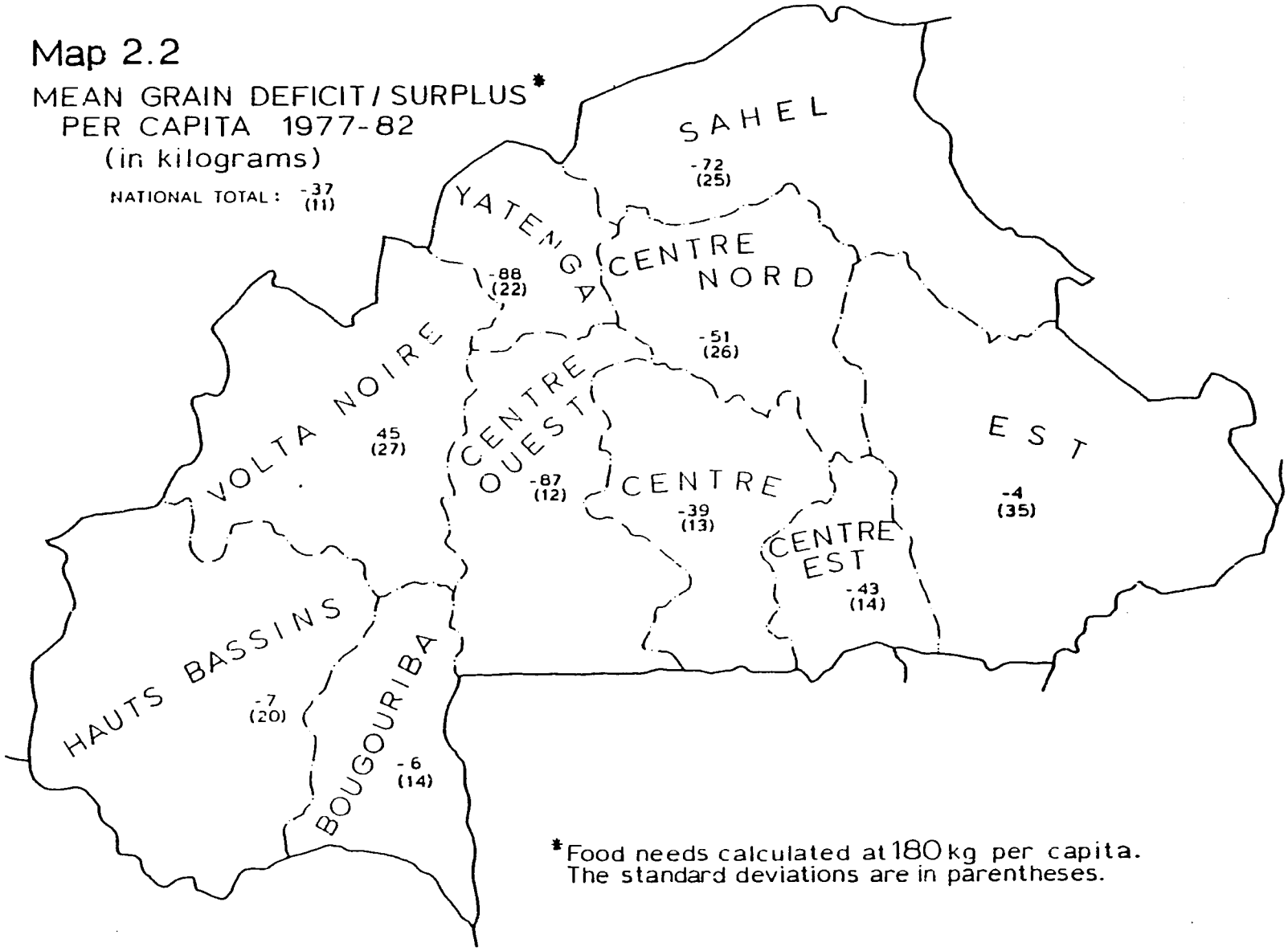
SOURCE: Calculated from regional population figures (see Statistical-Appendix), using 180 kg/person minimum consumption requirement.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Map 2.2

MEAN GRAIN DEFICIT / SURPLUS*
PER CAPITA 1977-82
(in kilograms)

NATIONAL TOTAL: -37 (11)



*Food needs calculated at 180 kg per capita.
The standard deviations are in parentheses.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

that has occurred over the past five years based on regional production and population figures.

Several conclusions are clear:

- Burkina Faso generally experiences a deficit in cereals production.
- Annual production increases are surpassed by annual increases in population.
- Even the more productive regions experience annual deficits. The Volta Noire is the only region with surpluses since 1975/76.[13]

Variations in weather from year to year account for the major differences in annual production. General trends in production are discernible for the past 13 years. According to Haggblade's calculations, the annualized growth rate in production for 1961-1979 is between 1.0 and 1.4%, depending on whether FAO or MDR statistics are used (see Haggblade, 1984, p. 21). Both rates are below the annual population growth rate. However, statistics for 1971-1983 indicate that production grew at 1.7% per annum during the period. This is closer to the annual rate of population growth.

There are considerable differences in regional rates of growth of production. The general trends are: declining production per capita in the north and across the Mossi Plateau, resulting in increasing grain deficits; and increasing production per capita in the Volta Noire and Southwest regions, resulting in increasing surpluses (or declining deficits). As we will see later, these changes in the pattern of production have caused important changes in marketing flows.

Local demand for cereals outstrips supply. To make up annual deficits in cereals production, Burkina Faso must import substantial quantities of foodgrains, a large amount of which is food aid. These shipments account for 20-50% of total imports. Even with imports,

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[13]By our calculations Bougouriba experiences small grain deficits every year. In that region, however, tubers are an important food source which is not included in our figures. Therefore, Bougouriba is at least self-sufficient. The statistics for Hauts-Bassins include those for the Comoe (because the latter was not declared as a separate region until 1978). Comoe is also self-sufficient. Hauts-Bassins is a deficit region because of the high urban population in Bobo-Dioulasso.

however, available grain supplies do not meet demand as defined by minimum per capita requirements.

The extreme variation in supply compared with demand in local markets requires the grain marketing system to redistribute grain within regions and especially between them. Variations in weather conditions and annual differences in regional as well as national production require flexibility in the marketing system, especially at the end points where grain is purchased from producers and sold to rural consumers.

Within-year variations in supply and demand in specific markets place an additional burden on the marketing system. The temporal dimension to marketing activities is best summarized by the evolution of prices throughout the year. Prices collapse the interaction of producers' selling behavior, traders' purchase and sales behavior, consumer demand, and changes in marketing costs over time. Prices are discussed in Chapter 3.

The conventional wisdom has been that producers sell at harvest (prices are low). Some surplus producers sell also just before the next harvest, liquidating stocks when prices are high. Advance sales to traders occur before harvest, but delivery is taken during the postharvest season, further increasing the availability of cereals at that time. Traders generally buy whenever they can, beginning as soon after harvest as possible. The majority of those purchases seem to be turned over as quickly as possible though a certain portion may be held for up to six months. Interannual storage by traders seems to be a very rare occurrence. OFNACER purchases from the time its buying price is announced until about March.

The demand for cereals is relatively constant throughout the year. Urban and industrial demand must be met entirely by the market. Demand among rural consumers for marketed cereals rises in the later part of the agricultural calendar in deficit areas, when on-farm stocks are low. OFNACER sells throughout the year, but 90% of its sales occur between March and October.

2.4 GEOGRAPHY OF GRAIN MARKETING

The geography of the national marketing system is determined

principally by the location of the major surplus and deficit zones (refer to Map 2.2). The major areas of grain surplus are in the south and west whereas the main deficit areas are in the north. The major flows are naturally from surplus to deficit regions but there are also significant intra-regional flows. Within each region or zone there are deficit and surplus markets and grain flows are in part a response to the forces of supply and demand. There is a movement of grain through one region to another. Map 2.3 shows the direction and relative magnitude of major grain flows.

On a national level the most important flows are:

Bobo-Dioulasso to Ouagadougou

Ouagadougou to Dori

Volta Noire to Yatenga

Volta Noire to Ouagadougou

Volta Noire to Bobo-Dioulasso

Pouytenga to Ouagadougou (from Burkina Faso, Togo, and Ghana)

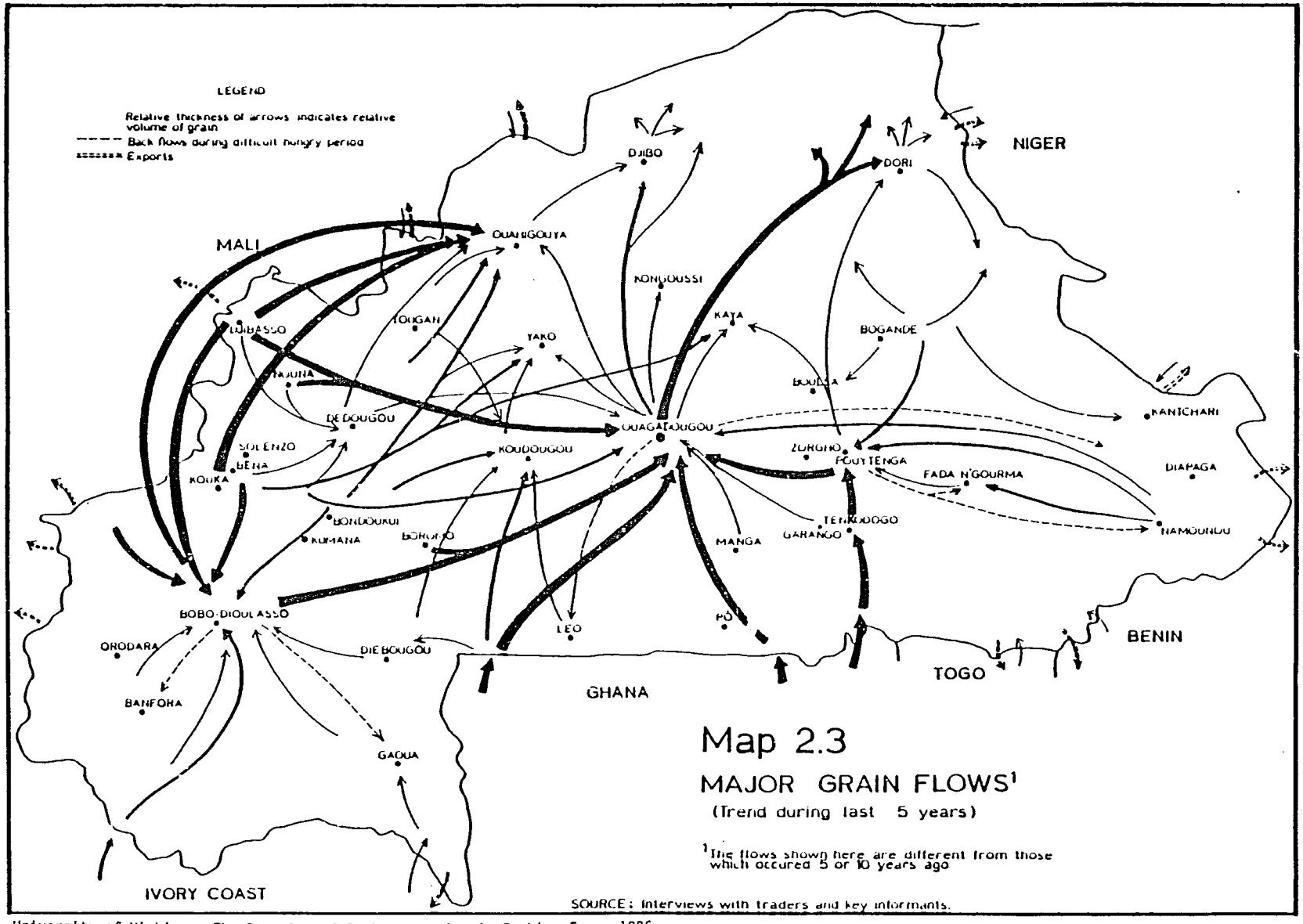
South-central Burkina Faso to Ouagadougou

Details of the intra-regional flows are given in the individual regional studies (Volume II).

The targets of the major flows are urban or semiurban areas where demand is strong. Within each deficit region, however, there is strong demand from rural consumers. Some of this is met by local production, but the rest must be fulfilled by regional imports through urban centers. The need for backflows into such rural areas is one which the private sector does not adequately satisfy.

As a result of location or local supply/demand characteristics, specific markets play distinct roles in the marketing process. We classify exchange points and exchange centers into the following eight categories:

- National distribution centers. These cities serve as centers of grain collection, distribution, and transit for the national market. They include Ouagadougou, Bobo-Dioulasso, and Koudougou. The distribution activities are primarily based near one or two markets in the city such as Sankariaré and the central market in Ouagadougou and the central markets in Bobo-Dioulasso and Koudougou.



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

- International rural markets. These markets serve as regional collection points but, more importantly, are transit markets for imports and exports from neighboring countries. The major ones are: Pouytenga, Djibasso, Guéléoungo, Hamalé, and Bitou.

- Urban regional centers. These are collection, distribution, and consumption markets which supply local urban demand and are funnels for regional supply. Examples are Fada N'Gourma, Dori, Ouahigouya, and Kaya.

- Semiurban regional centers. These markets are located in administrative subcenters. In surplus zones they are collection points (as well as supply points), and in deficit zones they are supply points for both rural and urban demand. Examples are Manga, Gourcy, Léo, Pô, Solenzo, Tougan, and Nouna.

- Important rural markets. These markets are usually located at important crossroads or administrative centers. They serve the needs of a large rural population. In surplus areas they are collection points for grain traders. Examples are Béna, Kouka, Bérénga.

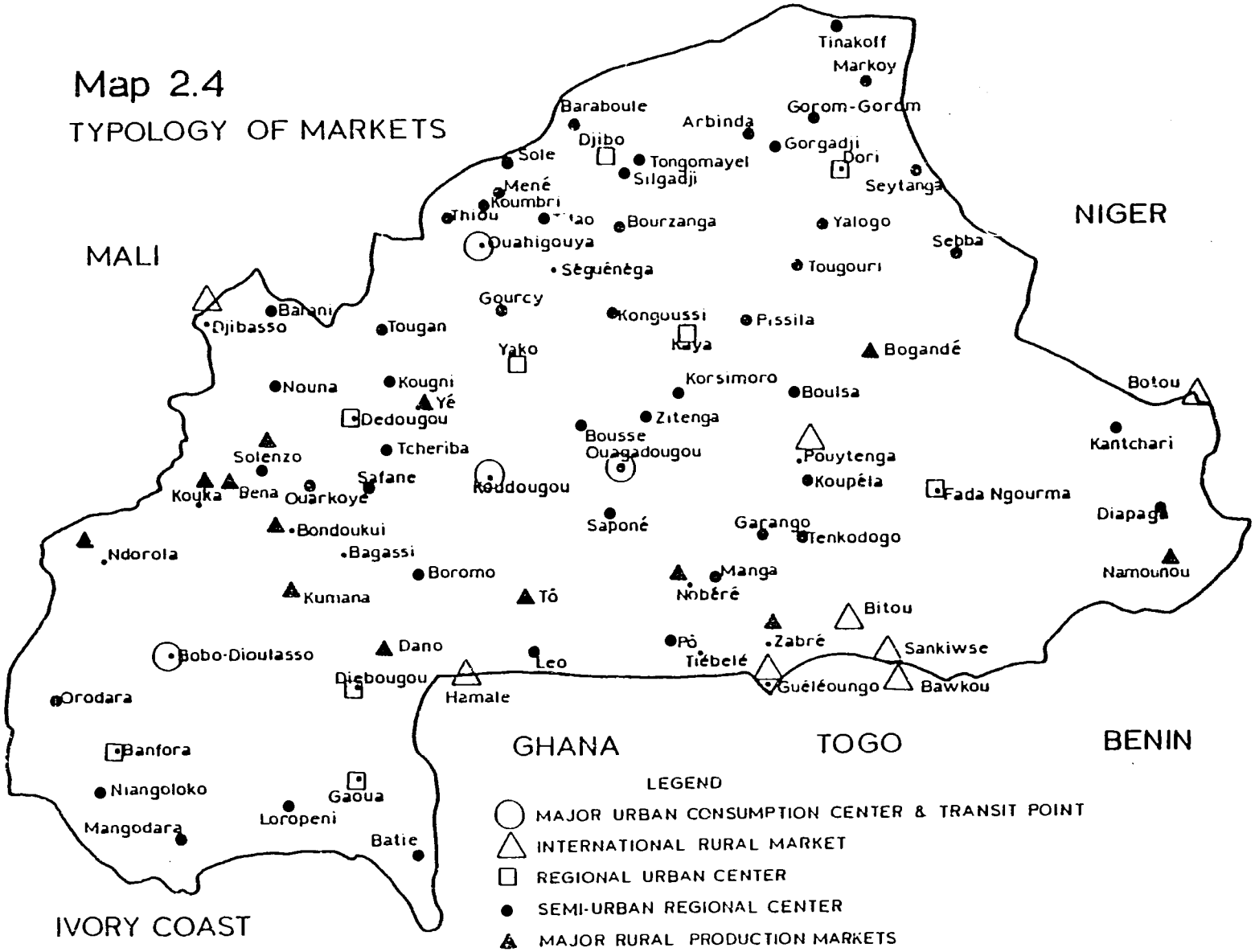
- Small rural village markets. These markets are located throughout the country, generally on the edge of a village or in an area between several villages. The specific location is often determined by custom. They are retail consumption markets. In the postharvest season they attract local grain traders.

- Urban consumer markets. These markets are located within cities to serve the needs of consumers living in different neighborhoods. They have a size and location hierarchy similar to that of rural markets. Grain traders as well as vendeuses and prepared food sellers are generally found in and around the market.

- Farmer's compound or village. This is an important location of first sale.

Specific markets may fall into more than one category. For example, Sankariaré in Ouagadougou is both an important part of the national distribution center of Ouagadougou (with wholesaling activities) and an important retail consumer market. Similarly, the main markets in Bobo-Dioulasso and Ouahigouya serve both retailing and wholesaling functions. Map 2.4 shows the major markets which fall into the different categories. The small rural markets are left out because they are too numerous to identify individually. Map 2.5 indicates the frequency of markets in different regions.

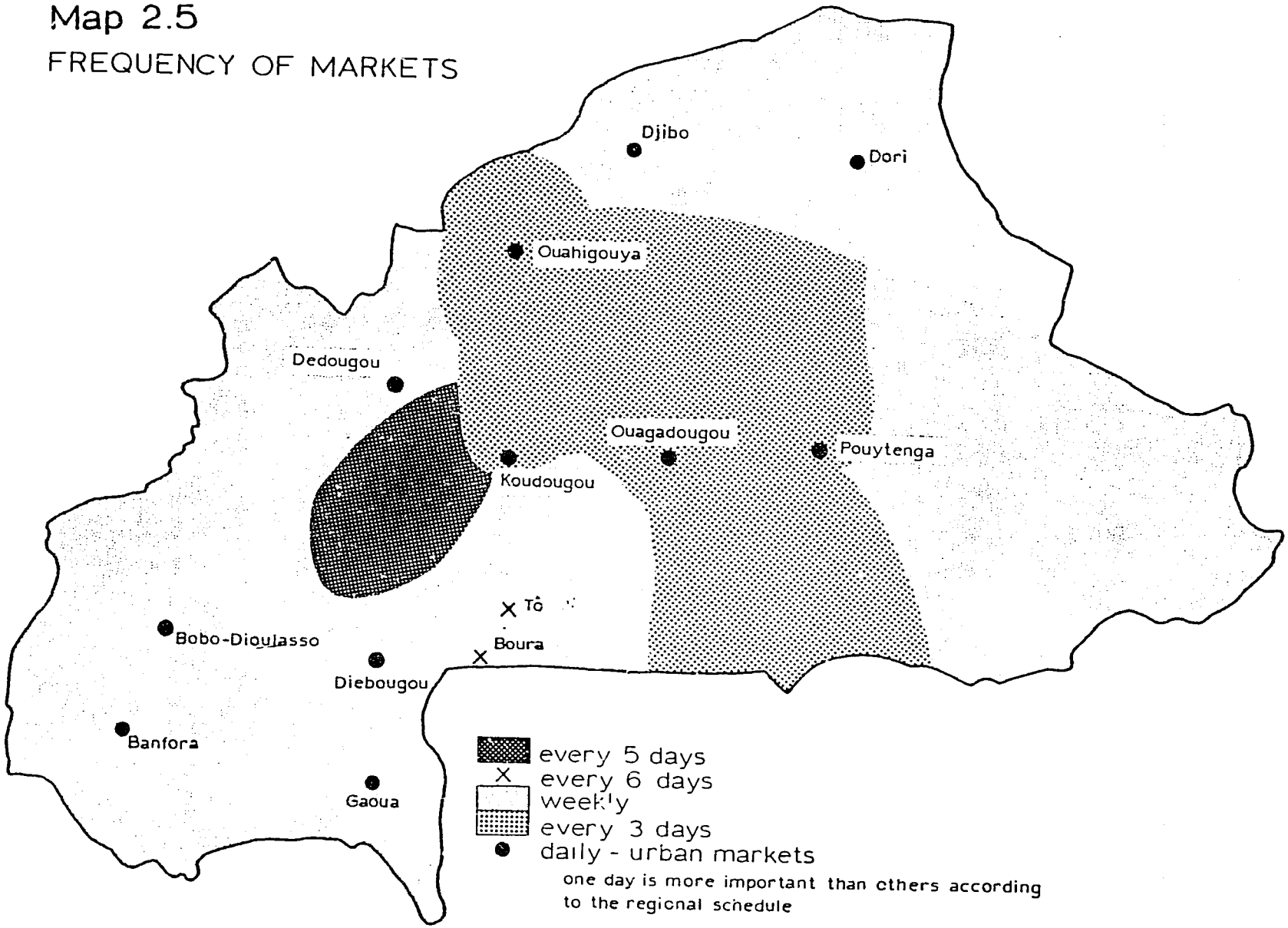
Map 2.4
TYPOLOGY OF MARKETS



SOURCE: Based on interviews with traders and government officials, and observations by interview teams in each region.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Map 2.5

FREQUENCY OF MARKETS



University of Michigan, The Dynamics of Crain Marketing in Burkina Faso, 1986.

Road infrastructure is the final element necessary for an understanding of the geographical pattern of grain flows. Map 2.6 shows the condition of roads throughout Burkina Faso. There are four main paved roads: one on the north-south axis, Pô to Ouagadougou to Yako and on to Ouahigouya;[1] one from the Togo border to Koupéla; the main east-west road from the Niger border to Fada N'Gourma to Koupéla to Ouagadougou to Bobo-Dioulasso to Banfora; and a fourth to the Ivory Coast border. Most roads, however, are unpaved. The major ones are usually graded after the rainy season. The condition of unpaved roads deteriorates quickly in the rainy season, significantly increasing the cost of transportation. Many villages are inaccessible by vehicle for several days at a time during the peak of the rainy season (July - September).

2.5 MARKETING CHANNELS

Between the first and final sales there are numerous possible channels through which grain can move, as indicated by the case studies. Variety exists in trading partners, the direction of trade, means of transportation, and financing arrangements. Figure 2.3 illustrates the different nodes in the grain marketing network, from production and imports to consumption, including all the choices and organizations that lie in between. The network involves both private and public sectors. An understanding of the specific characteristics of private trade is necessary to analyze both the efficiency of the private sector, and the competition and trading environment within which public sector activities operate.

2.5.1 Private Sector Marketing Channels

Private sector marketing channels redistribute grain from producers to consumers between and within regions, from rural to urban areas, within rural areas, and within urban areas. The three parts of

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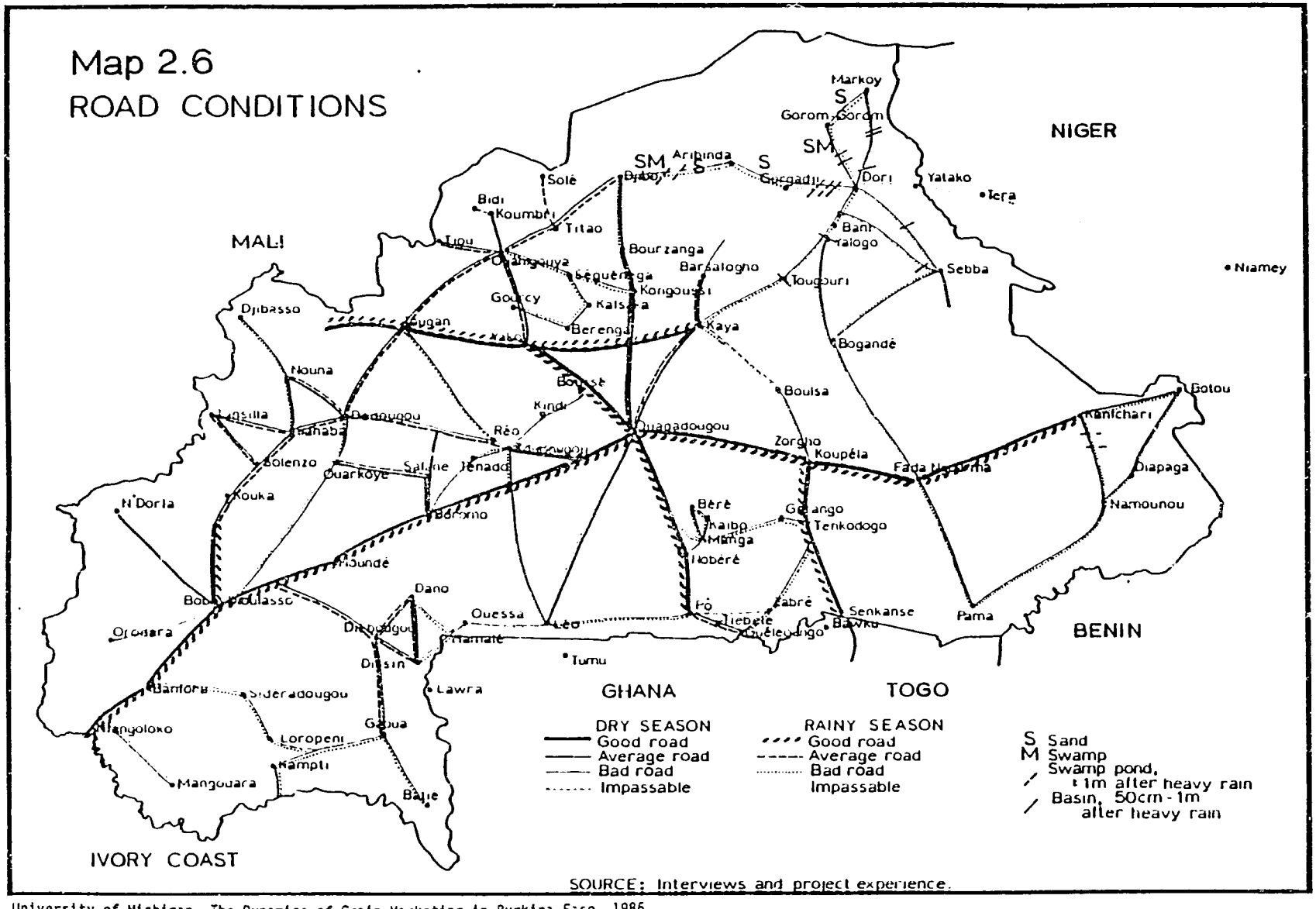
[1]When the research team left in February 1985 the road was paved to Yako, with plans to pave it to Ouahigouya.

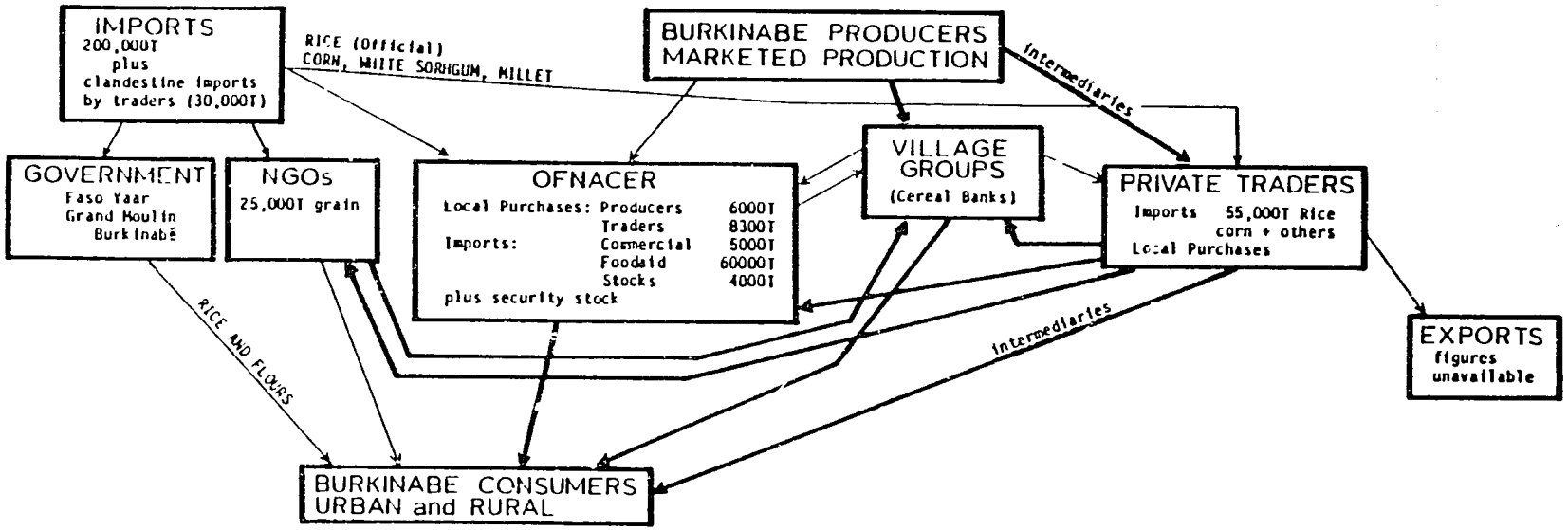


SOURCE: Interviews and project experience.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Figure 2.3

THE GRAIN MARKETING NETWORK IN BURKINA FASO[1]
(quantities of grain in metric tons (T))



[1]Figures for 1983-84 are approximate. They are synthesized from various sources including OFNACER, the Caisse Générale de Péréquation, and Statistical Bulletins.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Figure 2.4 show the most important marketing channels for distributing grain from one region to another (usually surplus to deficit) and for redistributing grain within a particular region. We summarize them as follows:

i) Grain passes through a chain of intermediaries financed entirely by a particular trader;

ii) Grain is bought from the producer by a self-financed trader (and his team) who is not resident in the region;

iii) Grain is bought directly from the producer by a self-financed local trader or is sold directly from trader to consumer.

In any particular geographic area some channels are more predominant than others. A fourth channel, prevalent everywhere but not discussed, is direct sale by the producer to the consumer.

The relative importance of the different channels in a particular area affects both the degree of competitiveness and the level at which competition occurs. This is discussed more fully in Chapter 3.

We discuss each of the channels, describing and providing illustrative examples of the major market participants. The interested reader will find a more detailed discussion of the different types of traders and their various activities in Saul's research report (Volume IV).[14]

The <u>first channel</u> is most like the one described in the second case study, white sorghum purchased in Kumana. The trader distributes money to the regional coordinators. They distribute funds to village agents or resident buyers who buy from producers in their village and its environs. The coordinator collects the grain in a central spot, and when enough is amassed, he contacts the trader to send a truck to pick it up.

The factor which distinguishes this channel from the others is that the chain of intermediaries is vertically integrated. A national or regional trader finances an entire team of collection agents, village agents, regional coordinators, and apprentices. They either earn a

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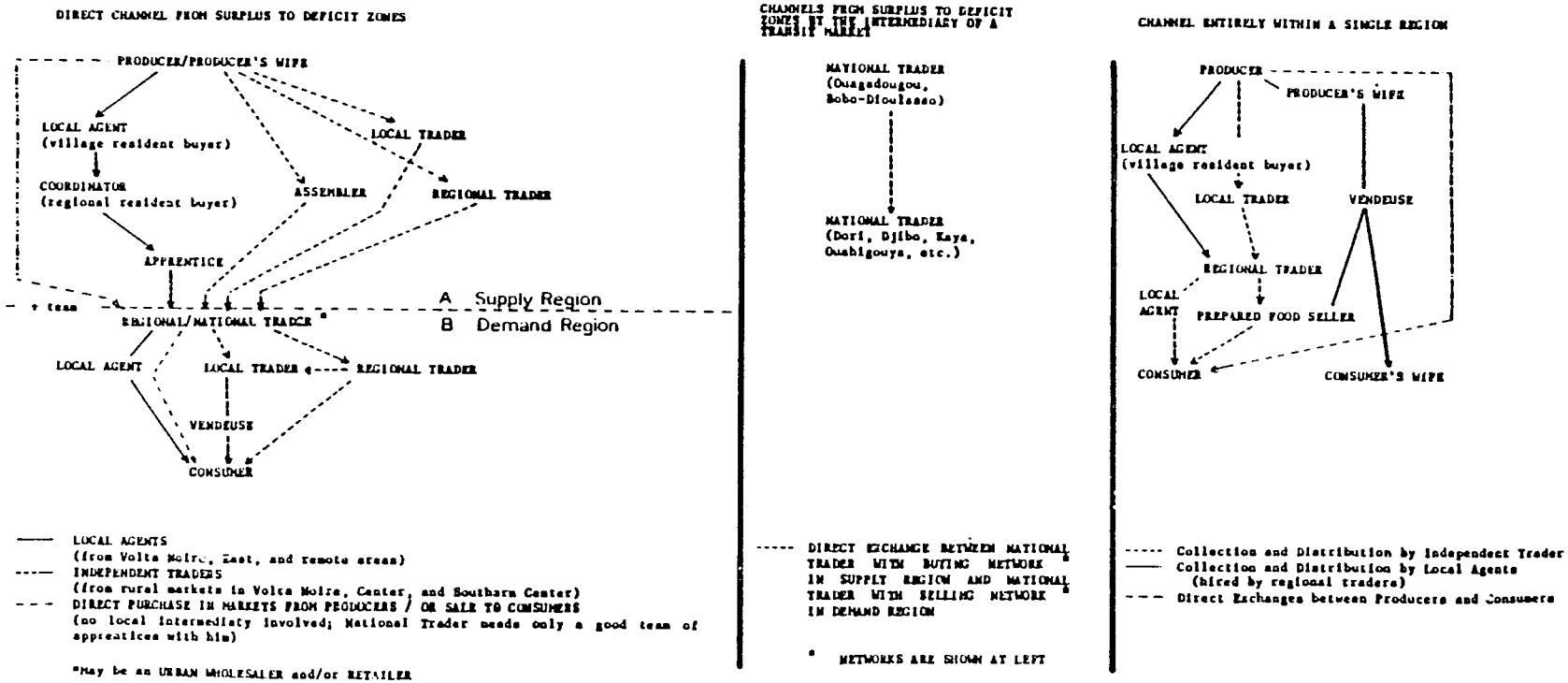
[14]Similar categorizations are given by Ouédraogo, 1983, Sherman, 1984, and Haughton, 1985.

Figure 2.4

MOST IMPORTANT MARKETING CHANNELS



—— LOCAL AGENTS
(from Volta Noire, East, and remote areas)
----- INDEPENDENT TRADERS
(from rural markets in Volta Noire, Center, and Southern Center)
- - - DIRECT PURCHASE IN MARKETS FROM PRODUCERS / OR SALE TO CONSUMERS
(no local intermediary involved; National Trader needs only a good team of apprentices with him)

*May be an URBAN WHOLESALER and/or RETAILER

----- DIRECT EXCHANGE BETWEEN NATIONAL TRADER WITH BUYING NETWORK* IN SUPPLY REGION AND NATIONAL TRADER WITH SELLING NETWORK* IN DEMAND REGION

* NETWORKS ARE SHOWN AT LEFT

----- Collection and Distribution by Independent Trader
—— Collection and Distribution by Local Agents
(hired by regional traders)
- - - Direct Exchanges between Producers and Consumers

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

commission per sack collected or receive a salary. Depending upon the extent of his capital, a trader may have teams in several different regions. If the trader knows a region particularly well and is available to "work" it, he may not need a coordinator. His team may include the following agents:

- Village resident buyers are village residents who buy grain on a trader's behalf. Generally they operate only in their own village. Their importance in the village hierarchy makes residents more willing to sell to them. The trader provides the capital and pays a commission.

- Regional resident buyers purchase grain in villages, and sometimes in markets with the capital of a trader and earn a commission. They have a network of village resident buyers (through personal relationships) to whom they distribute the trader's capital and from whom they collect grain.

A critical element in this channel are the village resident buyers, usually successful farmers themselves who start purchasing grain or export crops at harvest with the money advanced by large merchants. The relationship between merchant and buyer-farmer can continue for more than one generation. For example, Saul spoke with a young farmer in N'Dorola who had been a resident buyer for one of the most important grain merchants in Bobo-Dioulasso:

> His father had worked in the same capacity for the merchant's father. The young man told me that at some point he went to Bobo-Dioulasso to work as a painter. There he was in close contact with the merchant who acted as a patron for him in the city. After a few years the merchant's son who had started to take over the business suggested that the young man go back to his native village and work for them to replace his aging father. The young man eventually learned all the skills necessary for the job, and during our conversation in the presence of other farmers there was some good humored joking about the tricks he would do measuring grain or the false measures he would use.

- Resident sellers are a group similar to resident buyers. They act as intermediaries to supply thin markets in deficit regions. A regional trader, interested in retailing in remote areas, gives the seller an amount of grain to sell from his village. When he has sold it all, he can come back into town to get more. This is done particularly in the Djibo and Dori regions, where roads are very bad, distances between village and market are great, and demand is sporadic and thin.

The activities of resident buyers and sellers are financed by either regional or national traders.

- Regional traders are based in the major market town of a region but trade throughout the area. They have one or many agents, can store grain for long periods, transport and resell within the region, usually trade in other commodities (cash crops, cattle, or consumer items), and may have their own trucks. They often own bars and mills.

An example of such a regional merchant is a large trader from Pissila, interviewed by both Saul (Volume IV) and Dejou (Volume II). He had been involved in trading grain and oilseeds since the early sixties, first as an agent and later on his own behalf. In the sixties the trade in cereals was relatively less important; most of the grain needed in the city was supplied by small traders based in secondary centers or by the farmers themselves who transported the product personally. Gradually the merchant diversified into many occupations and acquired large vehicles. He received large loans dating from 1979, when the local branch of the BND opened in Kaya. Since this area is now usually in deficit, he buys most of his grain from merchants in Ouagadougou, but he also receives supplies
from the west where he occasionally sends a "brother" to buy.

- National traders are based primarily in Ouagadougou and Bobo-Dioulasso. Some are in Ouahigouya. They have teams of agents purchasing grain in surplus areas throughout Burkina Faso. They often also trade other commodities, like shea nuts and peanuts, and may have export/import licenses. They own trucks and often have investments in nontrading activities such as construction. They have warehouses located in their city of operation and can store grain for long periods.

One difference between the activities of the largest grain merchants in Ouagadougou and of those in Bobo-Dioulasso is that in the latter all the grain is collected directly in producing areas while in the capital merchants collect only part of the grain in their own region. The same is true for big consumption centers such as Ouahigouya or Yako. In addition to what is collected by agents and independent traders in the producing areas, a very wealthy group of merchants is responsible for bringing in large quantities of grain from Ouagadougou and Bobo-Dioulasso.

As deficits have become more intense, traders from deficit regions often try to buy in markets which are unfamiliar to them. In such instances they do not necessarily know which traders have grain at a particular time. Since they do not live in the urban areas where the largest transit markets are located, it is often expensive for them to have to spend a lot of time acquiring market information. They may rely

on brokers to help them find the grain they need and to make contact with the appropriate traders.

- Brokers connect wholesale buyers and sellers. They never take possession of the grain but may have storage facilities in a transit market which they can rent to the sellers. They take some kind of commission on the brokered transaction.

Regional and national traders may also buy directly from producers or local independent traders in producing regions. This is the second channel, illustrated by the first case study of corn purchased in Guéléoungo. The traders arrive in the market with a team consisting of apprentices and assemblers.

- Trader's apprentices, usually relatives of a trader, are learning the business. They buy in villages and markets. The trader gives them living expenses, perhaps a bonus based on the quantity they accumulate and later, partnership or the capital to establish an independent enterprise.

- Assemblers can be agents or independent traders. They buy on market day and resell at the end of the day to regional or national traders who are clients. Often they begin as an agent, amass some capital and become independent.

Some assemblers also play the role of resident buyers for traders who come from other regions. The trader may lodge with the assembler when he is on a buying trip. Because the assembler knows the region well, he can act as a broker or local agent for the nonresident trader.

Apprentices and assemblers are often relatives of the merchants. Many are sons who may take over the business in the future. Some, however, may only be distant relatives or be affiliated through acquaintances. Saul recounts interviews with merchants about their apprentices:

> A major Jula merchant of the younger generation in Bobo-Dioulasso explained this practice to me in this way: "when you are rich, poor relatives send their sons. Our house was full of 'brothers' some of whom hardly related at all, but who still live with us and whom I could not address with any other term. They all work for the business." Another important Mossi merchant, this time from among the groups whose involvement in the grain market is more recent, said: "For example, I have this young

> brother in the village who does nothing. I bring him here. I buy him a moped. I give him money. He goes, spends 15 days in the producing areas. He travels around. He purchases 5 sacks over here, 10 sacks over there. When he has enough he rents a cart to bring them to a central point and sends me a message. I send him a truck and he brings his purchases here. You give him a commission to encourage him." Such agents if they are capable may advance and have a chance of becoming independent one day.

The more important the merchant, the more agents he has working for him. Often each one of these agents specializes in one region which in time he comes to know better than the master who sent him there. The method of operation of agents differs depending on the region and the relationship that the merchant has previously developed. If there are several resident buyers working for the same merchant in the areas, the travelling agent's function may consist primarily of coordinating them, providing them with cash, and arranging for the transport of grain to the "home" market.

The third channel generally operates on a considerably smaller scale than the other two and on a shorter time horizon -- like the third case study of millet bought in Tenkodogo. A local trader or vendeuse uses his/her own money to buy grain directly from the producer, either in the village, on the road to market, or in the market. He or she may sell directly to a local consumer or to traders from other areas who buy in that region. He or she usually resells it as soon as possible in order to keep capital turning over. If the trader has a large enough capital base he/she may store some grain to be resold later in the season. In the larger scheme of things, this channel, while different in terms of financing and vertical coordination, serves the same collection or distribution purpose as the chain of intermediaries in the first channel.

- Local traders use their own capital to buy grain around their own villages or towns. They may employ apprentices or agents, own a small warehouse, or rent storage space. They rarely own trucks but use carts, bicycles, and motorbikes to transport grain. They are almost always very successful farmers.

- Peasant traders (a subgroup of the local traders) are farmers who have amassed a small amount of capital which they invest in buying grain. They generally set aside a certain sum of money for this and continue to buy until it is exhausted. They do not buy and sell regularly on market days.

- Women retailers (Vendeuses) are specialists in the purchase and sale of small quantities, measuring with ladles or bowls. They usually buy and sell on the same day. They have a very small capital base and transport grain by foot or bicycle.

- Urban wholesaler-retailers buy from national or regional traders to sell to urban consumers. They have shops and usually sell other goods. They act as local traders in urban areas. Some are agents of the national or regional traders; others are independent.

There are many differences among small independent traders. They may engage in very different types of activities, and the smallest ones may sell grain only in the early part of the year when it is cheap and plentiful. Some travel very extensively within and outside of the country to take advantage of market price differentials caused by transport difficulties. Such individuals may act as entrepreneurs opening up new avenues, but their activities do not always result in the establishment of new patterns.

The majority of the traders who operate out of stalls in urban markets possess negligible amounts of capital and handle very small amounts of grain. Most handle less than 500 sacks per year and control capital of less than 5 million FCFA. They do not have dealings with the banks. Some of the younger traders keep simple records, especially for credit transactions.

Those who buy in villages often sell the export crops which they collect to the same major merchant who supplies them with grain when it becomes scarce later in the year. But the smallest traders, especially in Ouagadougou, may not buy in local markets at all for lack of capital. Then they are reduced to the role of simple retailers. Many such small traders operate out of somebody else's stall in one of the secondary markets of the city by paying the tenant a small fee of 25 to 50 FCFA per sack brought for storage. This gives them the right to spend their time at the stall, talking to customers and conducting their business.

A final group of independent traders consists of the prepared food sellers.

- Prepared food sellers sell food or sorghum beer in the market or by the side of the road. They purchase unprocessed food grains and transform them while adding other ingredients. The resulting product is sold directly to consumers.

They act both like local independent traders (buying directly from

producers or from other local traders) and like consumers. The size of their operation, which varies from very small bush market sellers to large urban traditional breweries, determines the amount of grain they purchase and the way they negotiate. In some areas, such as Manga, the local beer brewers and the agents who purchase for urban brewers are an important force in the market.

A word about gender roles is in order. Most of the women operating as intermediaries are vendeuses. There are, however, women who act as village and regional resident buyers (Samo women in the Tougan region), local traders and urban retailers (in the Bobo-Dioulasso region). It is rather rare, however, to find men who buy and sell in the small quantities of the vendeuse, apparently because it is not dignified for men to trade in such small amounts. In certain markets and regions the vendeuses as a group have a considerable market share. As Saul explains, there are also important women wholesalers in both Ouagadougou and Bobo-Dioulasso.

One obvious distinction between the three different channels is the amount of capital behind the operation. Another is the destination of the grain. In the first two channels the grain is collected to be exported from the region. In the third channel, the grain may remain within the region if it is sold to a local consumer, or it may be exported if it is sold to a trader (entering the second channel).

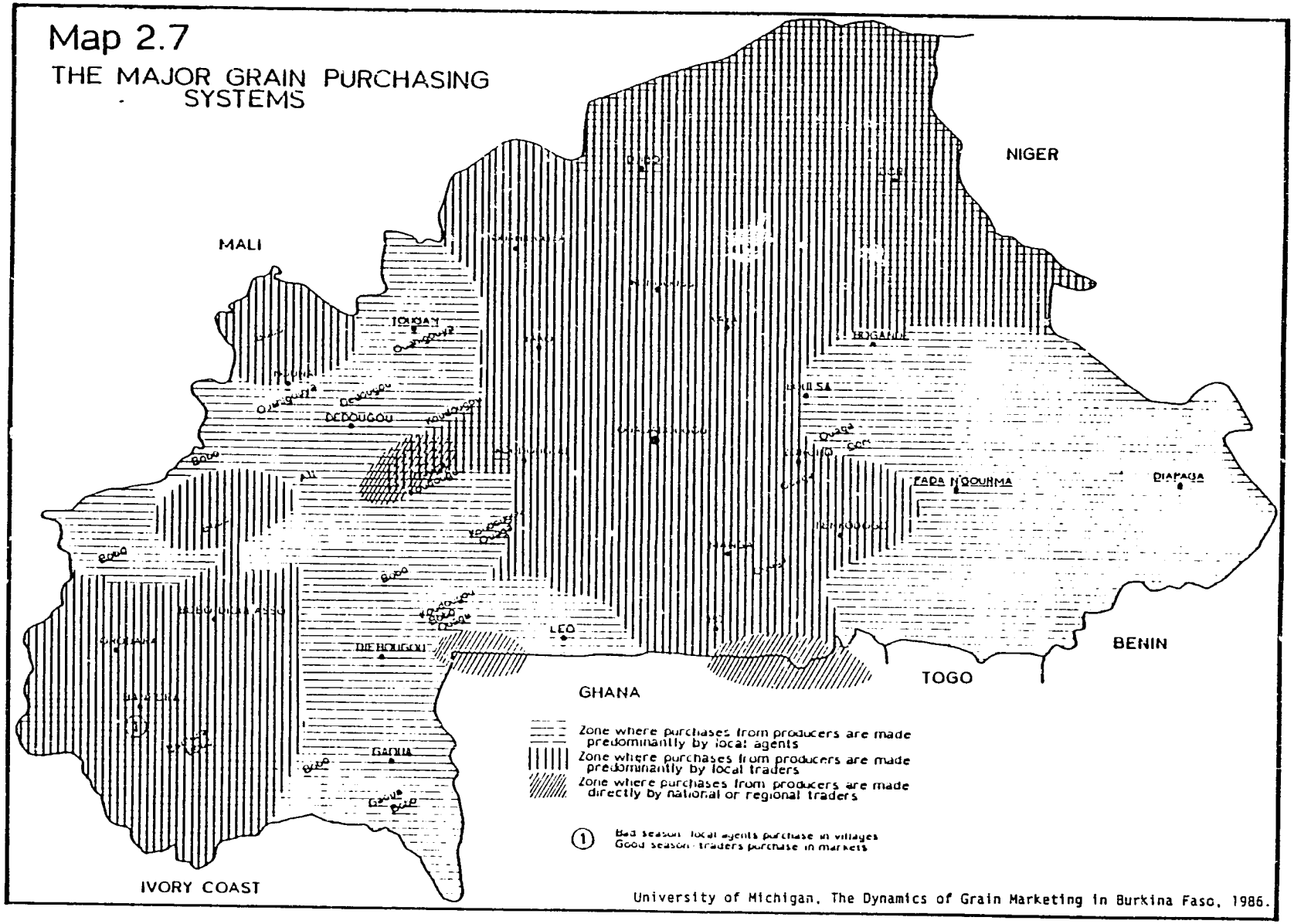
We hypothesize that a particular channel predominates because of the interplay of geography, road conditions, and relative availability of grain. Map 2.7 shows the predominant channels for purchasing grain from producers in different regions.

Resident buyers are the predominant purchasing agent in areas which are either heavily or marginally surplus, where roads are not good, and where markets meet infrequently. Local traders predominate in areas where grain is less abundant -- throughout central Burkina Faso (the Mossi Plateau) and close to urban areas. National and regional traders buy directly from producers in the border areas surrounding the Hamalé and Guéléoungo markets as well as in the area near Koudougou.

Each channel begins with an exchange between the producer and an intermediary working either for himself or for a private trader. Village groups also buy directly from producers, either for themselves (their

Map 2.7

THE MAJOR GRAIN PURCHASING SYSTEMS



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

cereal bank) or as an agent of OFNACER (as discussed in the next section). Although usually considered part of the public sector, village groups are in fact private sector institutions which have been promoted and used by the public sector.

- Village groups buy in the region of their villages, either at the farmgate or in the market. They can act on behalf of the cooperative's cereal bank or on behalf of OFNACER (two different sources of capital). Increasingly, village groups from deficit areas are making direct contact with groups in surplus areas to purchase grain. Cereal banks, run cooperatively by members of a village group, buy grain from local farmers and resell it to villagers at a marginal profit. They may also arrange to buy from OFNACER or from traders.

The groups can get starting capital from joint projects, membership dues, and loans from the ORD and private voluntary agencies. A building is usually built by the members with construction materials donated by an agency. They exist mainly in deficit and marginally surplus areas. Section 2.5.3 includes a more ellaborate discussion of cereal banks.

In each of the channels the intermediaries are slightly different, though they may perform similar functions: bulking, retailing, wholesaling, and transporting. In reality the lines between the different categories are not at all clear-cut; any individual may fall into more than one. They can be distinguished according to the following characteristics:

- Ownership of capital or title to the product. A trader owns the grain he trades. An agent operates on behalf of a trader.

- Extent of capital base. The amount of capital possessed by the trader.

- Remuneration of the intermediary. The agent may work for a commission or may be an employee or an apprentice of a trader.

- Length of storage time. Intermediaries may store grain between market days or may purchase and resell on the same day.

- Trading range and location. Intermediaries may trade in one village, one market, several villages, many markets, an entire region, or several regions.

Table 2.3 summarizes how the different intermediaries stand with regard to these characteristics.

TABLE 2.3

CHARACTERISTICS OF MARKET PARTICIPANTS

	Capital	Remuneration	Location	Trading Range	Storage/Turnover	Transport
Village Resident Buyer	none no title	commission	own village	village	months[a]	within the village
Regional Resident Buyer	none no title	commission	villages	villages	months[a]	within the village
Trader's Apprentice	none no title	salary	villages/ markets	villages/ markets	weeks	between markets
Assembler[b]	small base if any	profit or commission	markets and crossroads	near village	daily turnover	none
Local Trader	small base	profit	in/outside markets	near village	months	between markets
Vendeuse	small base	profit	in/outside markets	near village	daily/weekly	between village and market
Regional Trader (Mostly Wholesale)	large base	profit	in/outside markets	entire region	months	between regions
National Trader (Mostly Wholesale)	large base	profit	in/outside markets	entire country	months	between regions
Brokers	none	broker fee	Transit markets	none	none	none
Urban Wholesaler-Retailer	large base	profit	shops and markets	a city	months	within city
Urban Retailer	small base	profit	shops and markets	area of city	months	within city
Prepared Food Seller	small base	profit	in/outside markets residential areas	a neighborhood	daily/weekly	none
Cereal Bank	small base	marginal profit	in/outside markets	near village	months/years	within area
OFNACER	large base	--	in/outside markets	national	months	between regions

NOTE: a) Storage time depends on how often it is collected by the trader.
b) Assemblers can be either regional resident buyers or independent traders.

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2.5.2 The Public Sector

From 1964 to 1970, all public sector marketing efforts concentrated on export crops.[15] In 1964 the government established the Caisse de Stabilisation des Prix de Produits Agricoles (CSPP) to stabilize prices, increase production, and promote exports of groundnuts, cotton, shea nuts, sesame, and paddy rice. The Caisse licensed private and public institutions to assemble, bulk, transport, and export.

In 1968, in an effort to break from single product development activities, the government established regional development organizations, called ORDs or Organismes Regionaux de Développement, in each of the 11 administrative departments. Each ORD was to coordinate all development activities in its region. In the hope that they would be self-financing, the government encouraged them to engage in revenue-generating activities by granting them monopoly rights to purchase export crops from producers. For various reasons, primarily lack of financial, managerial, and infrastructural capacities, this was a complete failure, and the monopoly rights were repealed in 1970.

In 1971, during the Sahelian drought, the government established OFNACER. Its mandate was threefold:

i) To stabilize intra-annual grain prices by buying in surplus areas and selling in deficit areas;

ii) To smooth inter-annual price fluctuations by purchasing in good years and selling in deficit years;

iii) To establish an emergency grain reserve system.

In its early years OFNACER's main function was to distribute food aid. One of its major responsibilities is still the programming and sale of food aid.

In 1974 the government gave the ORDs monopoly rights to purchase grain for OFNACER. Because of insufficient personnel and equipment, they had to contract with local traders to purchase for them. In 1978 the government repealed the monopoly rights and officially sanctioned the parallel existence of private and public sector grain trading.

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[15]See Ouédraogo (1983), Haughton (1985) and Moussie (1985) for a more detailed discussion of the government's participation in agricultural marketing.

OFNACER has regional headquarters and warehouses in each ORD and secondary warehouses in major centers throughout the ORDs. Map 2.8 indicates the location and capacity of OFNACER warehouses throughout Burkina Faso. Table B.4 gives more details about OFNACER storage capacity.

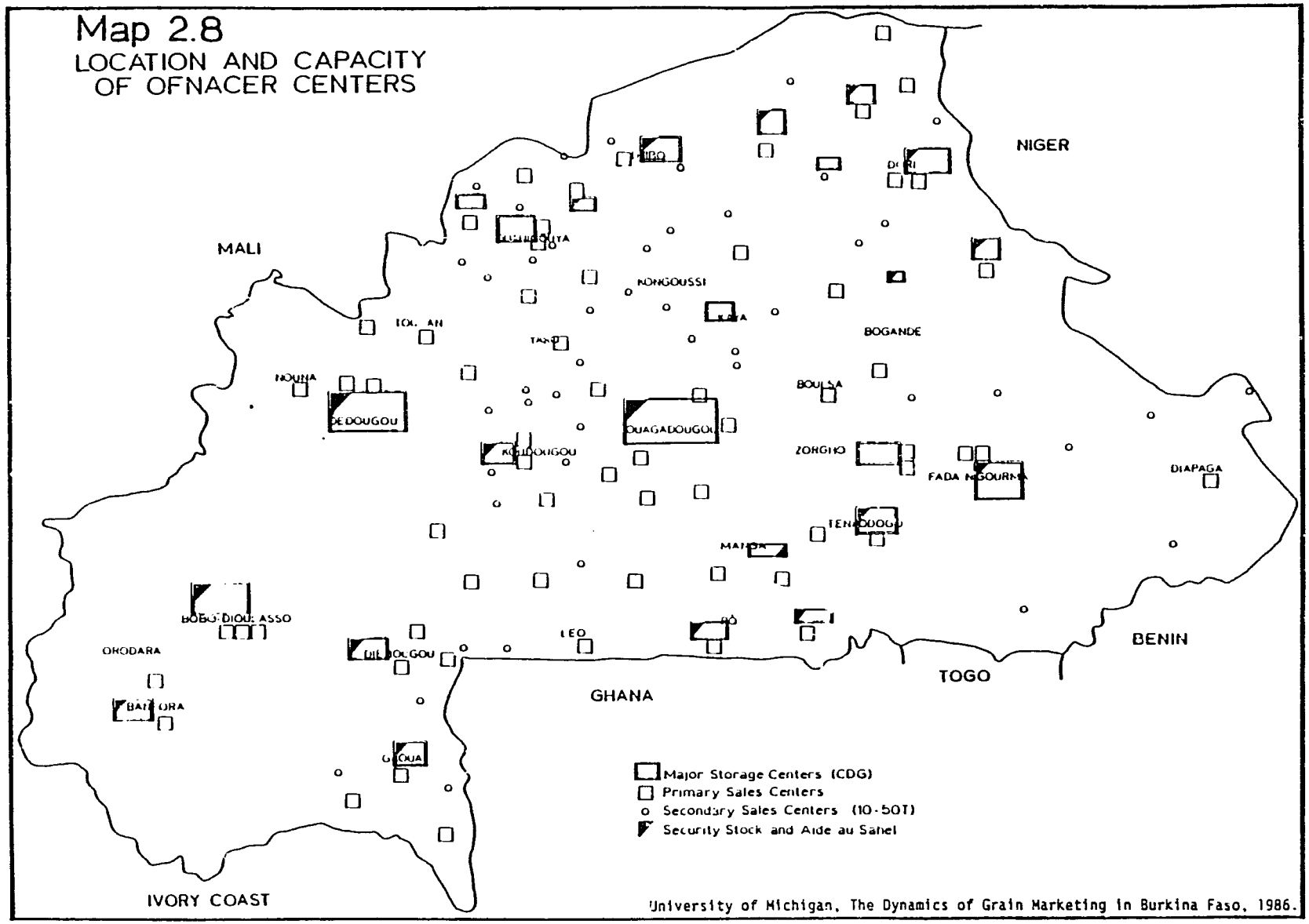
OFNACER opens the buying campaign after the harvest, once the government establishes official prices. Buying in selected areas where the market price is lower than the official price, it stores or transports the grain for storage, and it sells in cities and deficit regions. Government policy regarding cereals marketing has been generally the same since 1978 with the government ready to buy at the official producer price and sell at the official consumer price throughout the country.

OFNACER is the major channel for distributing annual gifts of food aid from all sources. Food aid which is in good condition is sold at the same prices as local cereal stocks. That which arrives spoiled in some way is also sold but at reduced prices. OFNACER distribution centers are also used for distributing emergency food relief supplies, which are generally sold at lower prices.

2.5.2.1 Official prices

Official producer and consumer prices are set by an inter ministerial technical committee which was established shortly after OFNACER was created. The twelve-member committee is chaired by a representative of the Ministère du Développement Rural (since 1984, the Ministère de l'Agriculture et de l'Elévage), and includes representatives of private grain merchants, farmers, OFNACER, and the Ministère du Commerce (since 1984 the Ministère du Ravitaillement du Peuple). Typically, producer prices are set in September or October, once the size of the expected harvest has been estimated, and consumer prices are set in March, after OFNACER has made most of its purchases. OFNACER, itself, has a voice on the committee, but no authority to set prices. Its role is simply to buy and sell at the official prices.

A variety of criteria seem to be of concern to the committee when setting prices. How the final prices are determined is unclear. For rice, import parity has clearly been important. For domestic food crops,



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

the food crop division of the Ministère du Développement Rural has favored a producer price which will cover "production costs of dynamic farmers in the climatically favored areas" -- an incentive price to producers.[16] OFNACER, aware that it must compete with the private sector, seems to favor a farmgate price that reflects market conditions, with an adequate markup to cover its costs. In 1984 OFNACER tried to encourage different regional prices to reflect differences in marketing (mostly transport) costs. Traders and the Ministère des Finances do not want too small a spread between producer and consumer prices. The Ministère du Commerce is concerned for the consumer.

The result of these different forces has led to the prices shown in Tables 2.4 and 2.5. Moussie (1985) compares the evolution of official grain prices with prices of other goods and services in Burkina Faso and neighboring countries.

2.5.2.2 The buying campaign

Producer prices, fixed by the same interministerial committee, are usually announced in October. OFNACER then begins its buying campaign, which continues until March. Theoretically, OFNACER stands ready to buy everywhere. In practice, however, it buys principally in the major surplus zones.

OFNACER purchases locally produced cereals through three kinds of intermediaries, who buy from producers:

i) An OFNACER agent;

ii) Village groups;

iii) Traders.

Table 2.6 shows the quantities of grain purchased in each region through each of these channels for the buying campaigns from 1978/79 to 1983/84. Considerable variation exists in both the quantities purchased and the proportion coming from different regions. Obviously most grain is purchased in surplus regions. In 1978/79 the Centre, Hauts-Bassins, and Volta Noire provided three-fourths of everything OFNACER purchased

[16]Haughton (1985) feels they weaken their case by proposing unrealistically high prices based on a high imputed cost of labor.

TABLE 2.4

OFFICIAL PRODUCER PRICES
(in FCFA per kilogram)

	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Millet	12	14	18	22	18	21	32	40	40	45	50	60	66	80
Corn	13	15	18	22	18	21	32	40	40	45	50	55	60	85
White Sorghum	12	14	18	22	18	21	32	40	40	45	50	58	64	80
Red Sorghum	a	a	a	a	a	a	a	30	32	37	42	50	55	75
Rice	19	19	30	35	35	55	63	63	63	63	68	68	74	-

SOURCE: OFNACER.

NOTE: a) This grain was not bought by OFNACER in that particular year.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.5

OFFICIAL CONSUMER PRICES
(in FCFA per kilogram)

	71/72	72/73	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85
Millet	20	26	30	32	30	35	45	57	57	69	80	80	90	b
Corn	20	27	32	32	30	35	45	57	57	69	80	80	88	b
White Sorghum	20	26	30	32	30	35	45	57	57	69	80	80	88	b
Red Sorghum	a	a	a	a	a	a	a	47	47	61	75	75	83	b
Rice	n.a.	n.a.	n.a.	n.a.	60	80	110	125	125	125	135	155	155	b

SOURCE: OFNACER.

NOTE: a) This grain was not sold by OFNACER in that particular year.
b) Prices had not yet been announced when the research team left in February 1985.

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TABLE 2.6

QUANTITIES OF GRAIN PURCHASED BY OFNACER FROM DIFFERENT SOURCES

	1978/1979		1979/1980[b]		1980/1981		1981/1982		1982/1983		1983/1984	
	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%
CENTRE	4,258	(27.8)[a]	1,167	(13.5)	138	(5.3)	1,776	(6.2)	1,768	(7.1)	62	(1.1)
Village Groups	1,513	35.5	-	-	-	-	59	3.3	12	.7	-	-
Traders	-	-	-	-	-	-	-	-	1,748	98.8	62	100
OFNACER	2,745	64.5	-	-	138	100	1,717	96.7	8	.5	-	-
VOLTA NOIRE	3,270	(21.4)	1,533	(17.7)	175	(6.7)	9,5[illegible]5	(33.2)	9,383	(37.9)	4,318	(73.8)
Village Groups	-	-	-	-	154	88.0	1,912	20.1	2,166	23.1	3,578	82.9
Traders	-	-	-	-	-	-	-	-	3,492	37.1	232	5.4
OFNACER	3,270	100	-	-	21	12.0	7,603	79.9	3,725	39.8	508	11.8
CENTRE OUEST	577	(3.8)	310	(3.6)	58	(2.2)	1,563	(5.4)	753	(3.0)	370	(6.3)
Village Groups	-	-	-	-	-	-	46	2.9	12	1.7	172	46.4
Traders	-	-	-	-	-	-	-	-	341	45.2	-	-
OFNACER	577	100	-	-	58	100	1,517	97.1	400	53.1	198	53.6
HAUTS-BASSINS	3,877	(25.4)	656	(7.6)	320	(12.3)	8,749	(30.5)	5,[illegible]62	(23.8)	436	(7.5)
Village Groups	2,217	57.2	-	-	320	100	5,118	58.5	2,480	42.1	436	100
Traders	-	-	-	-	-	-	-	-	2,916	49.6	-	-
OFNACER	1,660	42.8	-	-	-	-	3,631	41.5	486	8.3	-	-
YATENGA	264	(1.7)	7	(.08)	-	0	2,969	(10.4)	3,731	(15.1)	31	(.5)
Village Groups	128	48.5	-	-	-	-	740	24.9	419	11	6	17.8
Traders	-	-	-	-	-	-	-	-	3,286	88	-	-
OFNACER	136	51.5	-	-	-	-	2,229	75.1	26	1	25	82.2
EST	1,214	(7.9)	2,310	(26.6)	1,348	(51.7)	2,602	(9.1)	1,983	(8.0)	493	(8.4)
Village Groups	-	-	-	-	-	-	127	4.9	48	2.[illegible]	2	-.4
Traders	-	-	-	-	-	-	-	-	312	15.7	-	-
OFNACER	1,214	100	-	-	1,348	100	2,475	95.1	1,623	81.9	491	-99.6
BOUGOURIBA	-	(-)	1,442	(16.6)	385	(14.8)	521	(1.8)	1,141	(4.6)	16	(.3)
Village Groups	-	-	-	-	301	78.2	266	51.1	39	3.4	-	-
Traders	-	-	-	-	-	-	-	-	643	56.3	-	-
OFNACER	-	-	-	-	84	21.8	255	48.9	459	40.3	16	100
CENTRE EST	1,497	(9.8)	1,125	(13.0)	92	(3.5)	685	(2.4)	86	(.4)	124	(2.1)
Village Groups	87	5.8	-	-	6	6.5	256	37.4	-	-	-	-
Traders	-	-	-	-	-	-	-	-	2	2	-	-
OFNACER	[illegible]0	94.2	-	-	86	93.5	429	62.6	84	98	124	100
CENTRE NORD	[illegible]	(.2)	-	(-)	-	(-)	109	(.4)	23	(.1)	-	(-)
Village Groups	2[illegible]	95.7	-	-	-	-	21	19.3	-	-	-	-
Traders	-	-	-	-	-	-	-	-	23	100	-	-
OFNACER	1	4.3	-	-	-	-	88	80.7	-	-	-	-
SAHEL	305	(2.0)	110	(1.3)	93	(3.5)	160	(.6)	-	(-)	-	(-)
Village Groups	126	41.3	-	-	90	96.8	106	66.3	-	-	-	-
Traders	-	-	-	-	-	-	-	-	-	-	-	-
OFNACER	179	58.7	-	-	3	3.2	54	33.7	-	-	-	-
NATIONAL TOTAL	15,285	(100.0)	8,660	(100.0)	2,609	(100.0)	28,649	(100.0)	24,751	(100.0)	5,851	(100.0)
Village Groups	4,092	26.8	2,078	24	871	33.4	8,651	30.2	5,177	20.9	4,194	71.7
Traders	-	-	-	-	-	-	-	-	12,762	51.6	293	5.0
OFNACER	11,192	73.2	6,582	76	1,738	66.6	19,998	69.8	6,812	27.5	1,364	23.3

SOURCE: Bulletin de Statistiques Agricoles: Campagnes 1978-1979, 1979-80, 1980-81, 1981-82 and Campagnes 1982-83, 1983-84.

NOTES: a) Numbers in parentheses are regional quantity as a percent of the national total purchased throughout the country.
b) Data for 1979/80 was not available by source.

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locally. In 1979/80 and 1980/81 efforts in those regions were relatively less successful, and therefore the percentages from the Est and Bougouriba were higher. In 1981/82 and 1982/83, both successful buying campaigns, Volta Noire and Hauts-Bassins provided the most grain; and in 1983/84, a disastrous harvest, Volta Noire provided almost three-fourths of the total, which was only 25% of the amount of the previous two campaigns.

The proportion of grain purchased through each channel has changed over time, from being primarily through traders to a larger proportion coming directly from producers and village groups. The figures in Table 2.6 do not reveal whether year-to-year differences in the proportion purchased through different channels are the result of a change in emphasis or because cash advances did not reach village groups in time for them to buy larger quantities. In the last few campaigns the relative importance of village groups in the heavily surplus regions is due at least in part to a demand made by the donors in 1983 that OFNACER make no more than 10% of its local purchases from traders.[17]

In general village groups have accounted for about one-third of OFNACER purchases. The 1983/84 campaign, however, was a major exception. OFNACER purchased only 15-20% of what they had intended because the harvest was extremely poor nationwide and producer prices were relatively high even at harvest. Village groups provided 72% of that grain.

i) OFNACER Collection Agents

These agents travel to villages and markets in their designated region to purchase grain. They pay for cereals with funds from OFNACER. They receive 0.06 FCFA/kilogram (in 1984) for the grain they collect. Once they have collected a sufficient amount, an OFNACER truck comes to pick it up.

It is not unknown for these agents to operate a private trade using OFNACER funds.

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[17]The donors imposed this demand because they felt that when OFNACER buys through (from) merchants, the benefit to producers is diminished.

ii) Village Groups

In regions where village groups buy on behalf of OFNACER, ORD personnel hold meetings with village groups before the buying campaign opens to determine how much money should be advanced for purchasing cereals (based on last year's purchases and estimates of this year's harvest). The ORD arranges with OFNACER to have the grain transported to the nearest warehouse for measuring. Once the sacks are collected in the buying centers (CDGs), the grain is weighed and sacks are refilled to 100 kg. Accounts are settled with village groups based on these measurements. At the end of the campaign the village group receives a commission of 1.5 FCFA per kilogram of grain purchased for OFNACER. For the 1984/85 campaign this was increased to 2 FCFA/kilogram. The ORD itself receives 0.06 FCFA/kilogram for grain collected by its village groups.

In regions where village groups are active (e.g., Volta Noire and Hauts-Bassins), OFNACER is often in competition with traders for the grain which the groups collect. It is not unknown for a group to use its advance from OFNACER to collect grain, which it then sells to a trader because he offers a more attractive price. The apparently "unused" advance is returned to the ORD at the end of the season.

It is important to mention that in the same regions where village groups are active in collecting grain, they are also collecting cotton for the Société Voltaic de Fibres Textiles (SOFITEX). Since the cotton harvest occurs just after the grain harvest, OFNACER is also competing with SOFITEX for the energy of village groups.[18]

iii) Traders

The policy for buying through traders (commerçants agréés) has changed somewhat over the last six years. OFNACER used to pay a commission per sack and would collect the sacks from the traders. Now it pays a transportation fee per kilogram of grain delivered to the warehouse.

It is important to note that traders are paid the official price for the cereals they deliver. This means that farmers who have sold to them

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[18]SOFITEX pays village groups 2.75 FCFA for every kilogram of seed cotton they collect.

undoubtedly received less than the official price. For example, OFNACER reports that the Ouahigouya center buys a large quantity from traders (personal communication: Dr. Moussie). The traders report that the cereals are from the farmers in the Volta Noire region. For traders to be transporting cereals from Dédougou to Ouahigouya for the official price plus 4 FCFA/kg (in 1983/84), they must buy at least 5-10 FCFA/kgbelow the official price. In all probability, judging by market prices in Dédougou, they paid 20-30 FCFA below the official price.

2.5.2.3 The selling campaign

OFNACER stocks are transported to the major buying centers. There has been an ongoing debate within OFNACER as to whether it is more advantageous to store these cereals in the surplus or deficit zones.

In March the government announces consumer prices. The prices are in effect until the following March. OFNACER reports that 90% of its sales occur between March and October. The 10% of sales that occur between October and March consist mostly of rice being sold in Ouagadougou, Bobo-Dioulasso and Koudougou.

Until 1983 it was only possible to purchase coarse grains by 100 kg sack and rice by 45-to-50 kg sack. After the 1983 coup d'état, the government instituted a retail selling policy which allowed consumers to purchase in units smaller than a sack.[19] This procedure continued for only one or two months because the commercial director discovered that OFNACER was losing a large amount of money from it. Not only was OFNACER not covering its marketing costs, but 2-4 kg were being lost per sack in conversion to local units. Some selling centers decided to continue to use the tine.

In towns where OFNACER has a warehouse, consumers can simply go there to purchase. In areas which do not have a warehouse, an OFNACER agent will take grain by truck to sell in certain markets on designated days.

Tables 2.7 through 2.12 show the distribution of OFNACER sales throughout the country during the 1982/83 and 1983/84 sales campaigns.

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[19]The units were: pot, less than 1 kg; double pot, less than 2 kg; demi-tine, 7-8 kg; and tine 14-16 kg. They are measured by volume. Table B.5 gives the exact weights for each measure and grain.

TABLE 2.7

OFNACER MONTHLY SALES OF ALL GRAINS BY REGION
1982-83
(metric tons)

CDG	Total Grain (in kilograms)												
	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total
Kaya	15.1	35.4	89.0	106.9	59.4	87.8	391.8	638.2	706.9	471.1	888.0	792.1	4281.7
Sahel Dori	153.1	396.6	255.1	522.7	313.9	391.4	443.4	999.6	801.9	1189.0	1430.9	1186.4	8084.0
Koudougou	6.1	8.7	25.9	113.4	92.5	133.8	75.6	61.9	139.1	232.1	566.2	449.5	1904.8
Gaoua	8.3	11.2	14.1	19.9	52.6	25.2	14.7	18.2	75.0	73.6	260.9	202.7	776.4
Fada	26.6	40.4	13.2	25.6	39.4	28.4	26.9	28.0	38.6	123.5	529.0	299.5	1219.5
Dedougou	6.1	6.9	4.3	24.1	1.1	1.9	3.7	19.2	64.2	107.1	289.4	205.1	713.0
Koupela	7.8	9.5	8.4	6.3	7.3	8.6	16.8	27.8	31.5	111.2	330.3	375.8	941.3
Bobo-Dioulasso	89.6	24.8	52.7	22.2	7.5	692.3	205.9	308.5	890.6	18.9	1121.0	260.3	3694.4
Ouagadougou	126.4	175.1	164.3	158.0	294.5	276.4	1023.9	497.2	1351.8	2859.9	3207.4	4961.1	15096.1
Ouahigouya	45.5	0.	763.9	582.4	1116.1	1492.7	2373.7	1306.9	1830.9	1152.0	1935.4	5005.0	17604.5
Total	484.4	708.6	1390.9	1581.6	1984.5	3138.6	4576.4	3905.6	5930.5	6338.5	10538.5	13737.7	54315.7

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.8

OFNACER MONTHLY SALES OF ALL GRAINS BY REGION
1983-84
(metric tons)

CDG	Total Grain (in kilograms)												
	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total
Kaya	422.2	93.4	176.9	228.0	609.6	939.7	811.1	1175.2	1288.9	955.3	1577.5	1415.2	9693.6
Sahel Dori	513.7	376.8	805.9	681.1	1092.8	1293.4	1968.0	2359.7	2399.0	1074.8	451.1	216.9	3233.4
Koudougou	515.4	133.8	154.3	57.0	41.0	86.8	229.8	298.7	122.7	191.4	280.1	513.4	2623.6
Gaoua	155.5	108.4	67.4	31.2	83.0	118.8	124.8	171.7	125.2	217.8	128.6	96.7	1429.0
Fada	520.8	110.7	51.4	14.6	20.2	139.0	141.2	72.5	111.1	438.4	571.6	409.3	2600.6
Dedougou	73.1	91.1	64.9	32.0	38.3	66.2	172.3	289.2	259.8	257.0	373.4	793.3	2510.6
Koupela	195.5	18.9	21.0	0.	13.2	28.7	76.6	85.5	276.1	461.3	386.1	400.3	1966.5
Bobo-Dioulasso	0.	349.7	173.2	31.5	68.1	98.2	65.7	326.4	466.5	347.7	337.1	209.5	2473.5
Ouagadougou	1927.1	1478.7	689.1	481.5	837.0	1364.6	1191.8	2042.5	1557.0	1966.1	3184.8	2183.4	18903.4
Ouahigouya	346.6	428.9	367.4	468.8	509.1	563.3	513.8	932.5	1474.9	1080.5	2412.7	1833.7	11032.1
Total	4669.9	3190.4	2571.6	2025.7	3315.4	4698.8	5394.1	7754.0	8081.1	6990.8	9702.9	8071.7	66466.2

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.9

OFNACER MONTHLY SALES OF DIFFERENT GRAINS FOR ALL CENTERS
1982-83

Grains	All Sales Centers (in kilograms)												
	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total
White sorghum	36.9	53.0	25.1	82.5	47.5	78.7	74.0	131.6	446.0	623.2	2548.1	5032.7	9229.5
Red sorghum	41.8	.4	.3	31.9	62.6	148.3	434.4	952.7	2390.3	2269.4	2790.6	984.6	10107.4
Millet	3.3	3.4	3.4	55.0	13.2	5.2	17.3	121.5	549.5	802.7	1216.9	716.8	3508.3
Corn	49.5	395.7	938.8	941.2	1344.0	1573.6	2377.4	1069.7	765.0	1773.2	1801.4	2489.1	15518.9
Spoilage	145.0	26.3	127.0	171.4	287.4	250.3	709.2	994.2	935.4	91.3	1201.2	917.1	5967.9
Rice	207.9	227.6	296.1	299.5	229.6	972.4	964.0	585.9	844.3	778.6	980.3	3597.4	9983.8
Total	484.4	708.6	1390.9	1581.6	1984.5	3138.6	4576.4	3905.6	5930.5	6338.4	10538.5	13737.7	54315.7

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.10

OFNACER MONTHLY SALES OF DIFFERENT GRAINS FOR ALL CENTERS
1983-84

Grains	All Sales Centers (in kilograms)												
	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total
White sorghum	1686.1	1235.2	749.6	1074.5	2301.4	3597.8	3324.6	2550.5	1507.2	1888.8	1765.9	533.4	22215.0
Red sorghum	182.8	31.3	143.0	196.9	279.2	56.2	515.8	3310.8	3994.8	3816.0	2643.3	2316.0	17686.2
Millet	375.3	159.6	74.8	43.5	24.7	247.9	623.0	972.0	1131.2	273.5	50.2	19.4	3995.0
Corn	889.5	242.5	434.0	215.8	78.2	45.4	17.5	15.3	21.5	113.6	3772.6	4239.7	10085.4
Spoilage	143.1	195.8	237.2	22.9	51.9	12.8	51.6	4.4	3.4	.9	.3	8.3	732.6
Rice	1393.1	1326.1	935.1	472.1	580.0	738.7	861.5	900.8	1423.0	897.9	1270.7	954.9	11752.0
Total	4669.9	3190.4	2571.6	2025.7	3315.4	4698.8	5394.1	7753.9	8081.1	6990.8	9702.9	8071.7	66466.2

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.11

OFNACER ANNUAL SALES BY REGION FOR DIFFERENT GRAINS
1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoilage	Rice	Total	Total Kg per Capita
Kaya	90.0	1193.0	66.8	1335.6	1395.1	201.2	4281.7	6.0
Dori	1187.2	2349.0	305.4	2159.9	1611.8	470.8	8084.0	20.2
Koudougou	753.6	88.3	112.2	321.4	85.4	543.9	1904.8	2.1
Gaoua	149.4	2.9	147.6	40.3	224.7	211.6	776.4	1.9
Fada	511.9	25.5	377.1	77.7	16.0	211.5	1219.5	2.7
Dedougou	520.9	0	.2	0	22.5	169.4	713.0	1.0
Koupela	167.6	536.6	54.4	22.7	38.2	121.7	941.3	2.1
Bobo-Dioulasso	170.5	34.4	92.3	85.4	1568.1	1743.7	3694.4	5.8
Ouagadougou	2591.7	1389.4	2090.0	3190.4	6.2	5828.5	15096.1	14.2
Ouahigouya	3086.6	4488.3	262.4	8285.5	1000.0	481.7	17604.5	29.4
Total	9229.5	10107.4	3508.3	15518.9	5967.9	9983.8	54315.7	8.5

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2.12

OFNACER ANNUAL SALES BY REGION FOR DIFFERENT GRAINS
1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoilage	Rice	Total	Total kg per Capita
Kaya	2591.4	5068.1	456.5	1138.5	17.0	421.9	9693.6	13.4
Dori	7375.7	2072.0	2140.8	658.9	242.8	743.0	13233.4	32.6
Koudougou	674.0	142.5	185.1	474.3	63.8	1084.0	2623.6	2.9
Gaoua	853.1	.1	111.9	45.6	79.9	328.5	1429.0	3.5
Fada	1746.2	218.2	66.3	170.6	15.3	384.0	2600.6	5.6
Dedougou	1044.3	25.2	59.8	727.3	.8	653.0	2510.5	3.4
Koupela	474.4	758.9	74.4	310.5	2.4	346.0	1966.5	4.2
Bobo-Dioulasso	872.5	188.2	85.2	270.6	.5	1056.5	2473.5	3.7
Ouagadougou	4564.1	3368.4	775.0	4330.8	4.2	5860.9	18903.4	17.4
Ouahigouya	2009.2	5844.6	40.0	1958.2	306.0	874.2	11032.1	18.1
Total	22215.0	17686.2	3995.0	10085.4	732.6	11752.0	66466.2	10.3

SOURCE: Unpublished OFNACER data.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Detailed data on sales in each region are given in Tables B.6a-B.35b of the Statistical Appendix.

In both years about 50% of all sales took place in the Ouagadougou and Ouahigouya regions. Dori (the Sahel) ranked third in absolute quantities sold. In sales per capita, the Sahel received the most in both years, followed by Ouahigouya and Ouagadougou in that order.

Sales increased steadily from October to September in both years. In 1982/83, an average-to-bad production year, more than 50% of sales for all regions occurred between July and September. By contrast, in 1983/84 after a disastrous harvest, 50% of sales occurred between May and September.

The data on sales in individual subcenters indicate that the majority of sales are made in those subcenters located in urban or semiurban areas. Without more detailed information on buyers it is difficult to determine whether OFNACER benefits urban dwellers more than rural dwellers, though it would seem that it does.

Rice, almost all of which is imported commercially or as food aid, is mainly sold near the major urban areas (Ouagadougou, Bobo-Dioulasso, and Koudougou). It is difficult to discern other patterns with respect to particular grains.

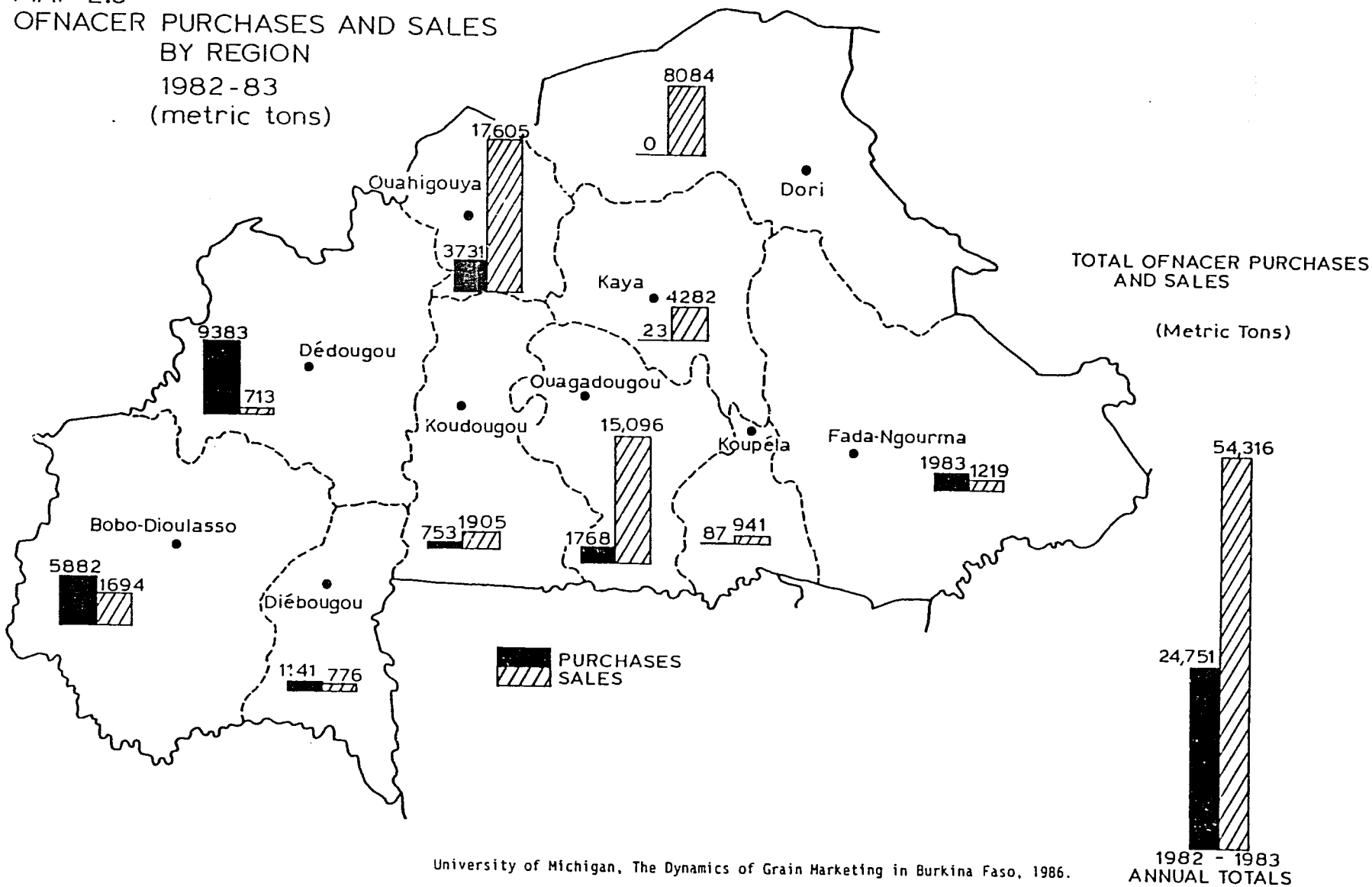
Maps 2.9 and 2.10 compare OFNACER's sales and purchase patterns throughout Burkina Faso for 1982/83 and 1983/84, respectively. In both years the redistribution from surplus to deficit regions is clear. In addition, the gap between locally purchased grain and the total quantity sold (about 50% in 1982/83 and 91% in 1983/84), which is made up by food aid, is readily apparent.

2.5.2.4 Nongovernmental organizations (NGOs)

It has always been official government policy to support the many NGOs which operate throughout Burkina Faso. They are involved in a variety of activities, some of which involve distribution of food aid. They also engage in the development of local institutions such as village groups which get involved in grain marketing. As such, the NGOs play a role in marketing grain.

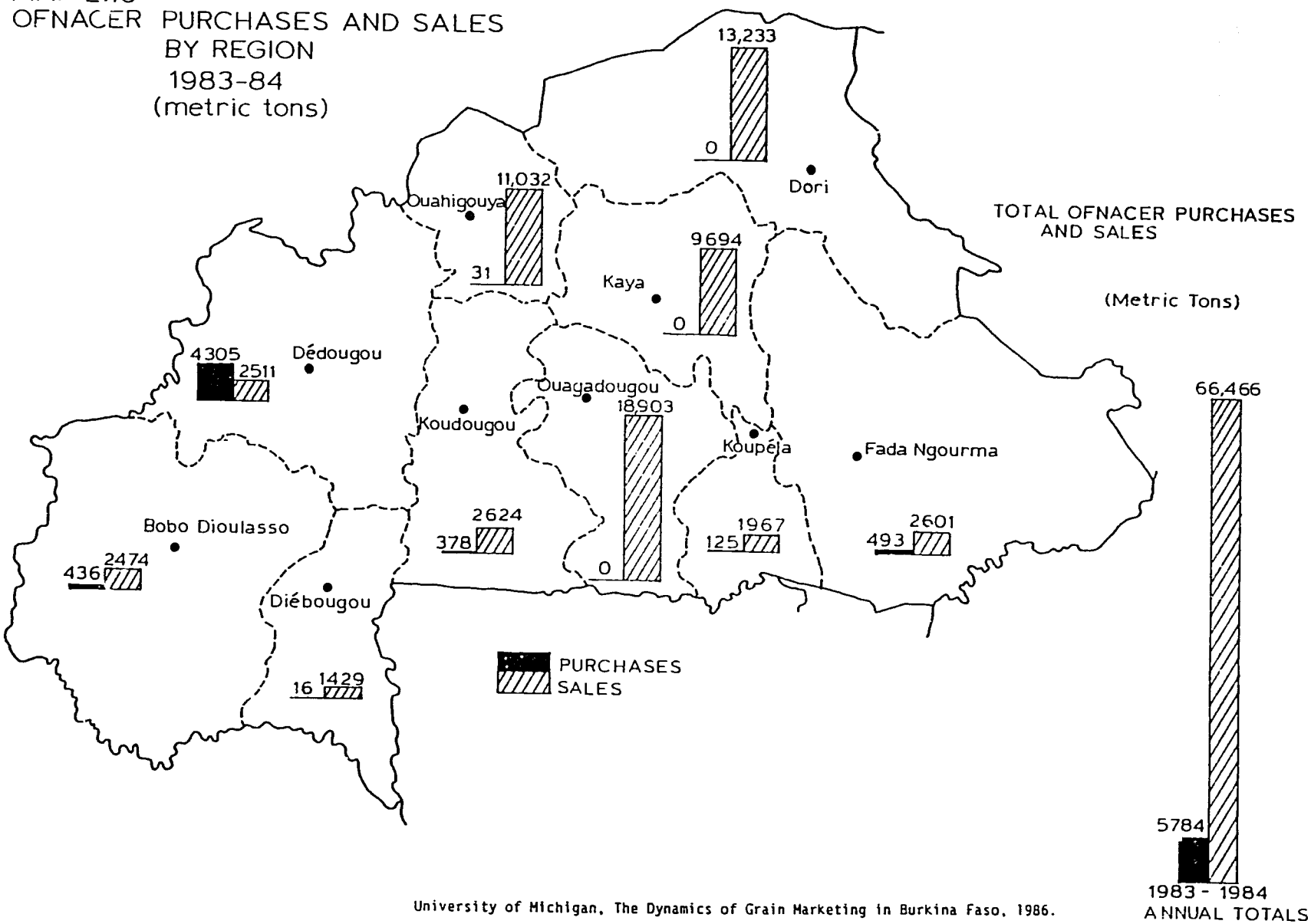
Catholic Relief Services (CRS or CATHWELL) distributes food (flour,

MAP 2.9
OFNACER PURCHASES AND SALES
BY REGION
1982-83
(metric tons)



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

MAP 2.10
OFNACER PURCHASES AND SALES
BY REGION
1983-84
(metric tons)



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

powdered milk, and oil) as part of its health education program at its mother and baby health centers. It also runs a Food-for-Work program in which village groups can get food for doing project work.

Among its community activities, Save the Children Fund (Fonds du Développement Communautaire, FDC) works with village groups in the Sahel region to purchase grain from village groups in surplus regions and from wholesalers in Ouagadougou.

Some NGOs get more directly involved by actually contracting with private sector traders to purchase grain for them on the open market. The NGO then delivers and distributes the grain. The trader from Pisilla referred to earlier explained that he had made such arrangements with Foster Parents Plan (Plan de Parrainage) in Boulsa.

2.5.3 The Interaction of Private and Public Sector Marketing Channels

It is clear from the preceding discussion that the private and public sectors do not operate independently of each other. OFNACER engages village groups and traders in its buying activities. NGOs negotiate contracts with private traders, and the government encourages NGO and international donor support of cereal banks run by village groups. As will be discussed in the next chapter, this results in coordination between public and private sector market participants, as well as competition.

Grain which enters private sector channels may eventually be distributed through the public sector. This occurs, for example, when OFNACER buys grain at official prices from a private trader, or when OFNACER makes a special contract with a private trader to provide grain at a negotiated price. In both cases a producer has sold grain to the trader at free market prices, but the grain is subsequently sold to a consumer at subsidized prices. Similarly, grain which is purchased and distributed through the public sector may eventually be resold by a trader at free market prices.

The difference between official and market prices has created two important creative links between public and private sector grain marketing. Because certain public sector employees (e.g. members of the military) have the possibility of buying grain from OFNACER on credit, there are now traders in both Bobo-Dioulasso and Ouagadougou who buy that

same grain from the employee for about 500 FCFA less than the purchase price. This gives the employee cash, and the trader grain at below market prices which he or she resells at market prices. Undoubtedly this practice occurs in other towns as well.

There are frequent rumors of traders buying large quantities of grain from OFNACER. These rumors were especially strong after an official government visit to Dori in 1984, because OFNACER bags were found in the market. There are, however, other reasonable explanations for this. Local government officials (from the ORDs and prefectures) indicated to us that they felt it is impossible for traders to be buying large quantities. Surely there are traders who manage to buy directly from OFNACER; the important question, which we cannot answer, is how often does it occur, and what quantities of grain are involved?

Cereal banks and village groups are a particularly interesting link between the public and private sectors. Both village groups and the cereal banks which they operate (as well as their other activities) are cooperative (community) private sector activities. Village groups, organized with the help of the ORDs, begun in the mid-seventies, are simply farmers from a particular village who have organized themselves into a group. As a group they have access to assistence, both material and financial, from the ORDs as well as from other organizations.

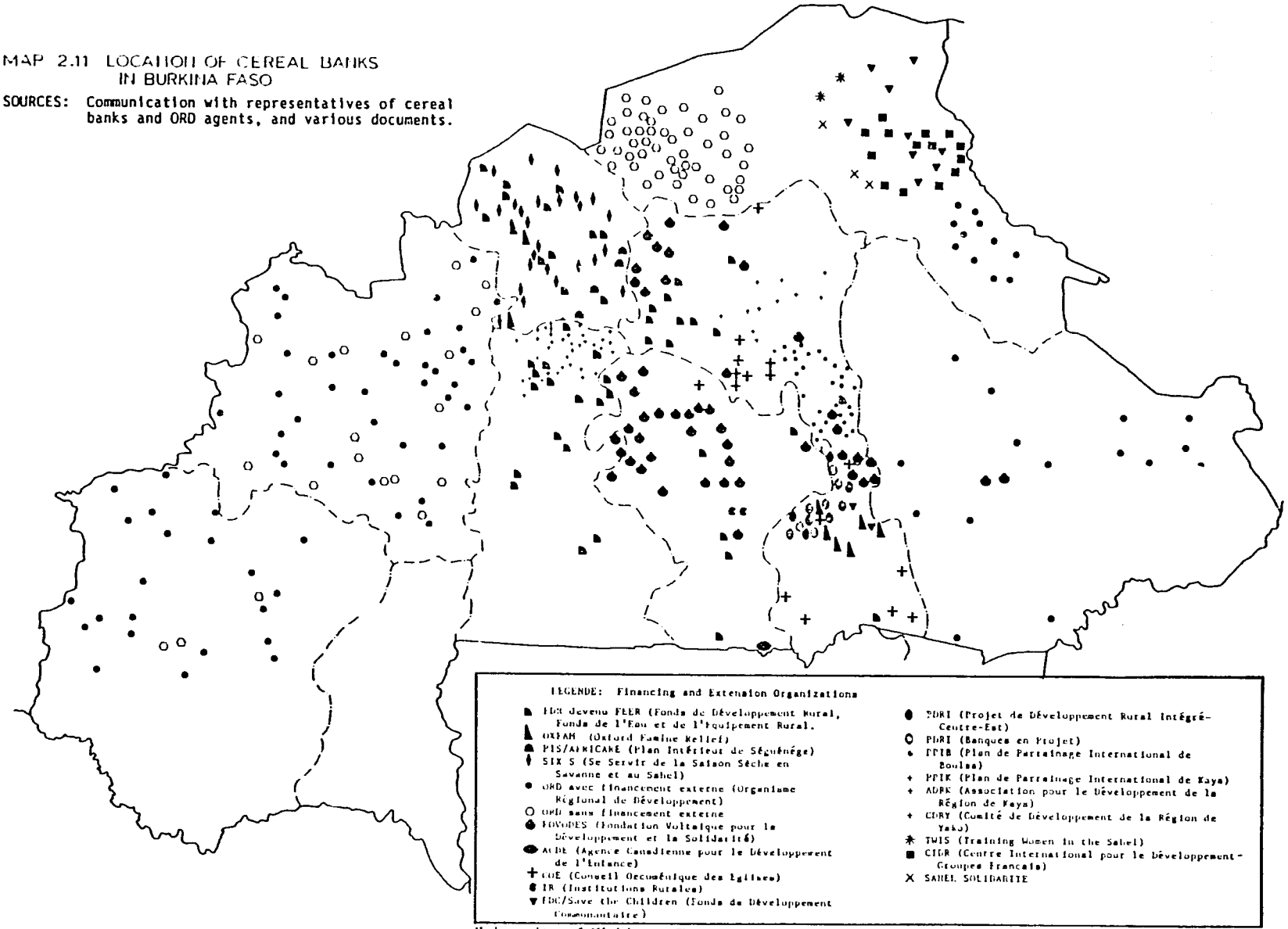
Many village groups have built cereal banks, often with assistence from donors or NGOs. The purpose of a cereal bank is to provide a way of keeping some local marketed surplus in the producing region. The cereal bank usually buys at the market price and sells the grain later in the year with a small profit margin (usually between 500 and 1000 FCFA/sac). The banks which have been successful manage to increase their revolving fund over time. Members often decide to use some of the profit for building village pharmacies or birthing hospitals.

In the late 1970s and early 1980s cereal banks were in vogue. Many donors gave money to establish cereal banks throughout Burkina Faso. As is explained in more detail in the Rapports Régionaux many of these cereal banks lacked administrative and managerial capacity to be run effectively and as a consequence, failed or limped along financially.

Cereal banks were also built in areas where production was not a problem, and thus the reason for the banks was unclear. Map 2.11 shows

MAP 2.11 LOCATION OF CEREAL BANKS IN BURKINA FASO

SOURCES: Communication with representatives of cereal banks and ORD agents, and various documents.



University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

the approximate location of the cereal banks throughout Burkina Faso. Table 2.13 give details about the location, financial arrangements, and condition of cereal banks funded by different agencies.

Although encouraged by the public sector and private voluntary agencies, cereal banks are essentially private sector organizations, acting as a collusive force against private sector traders.

2.6 CONCLUSION

This chapter has described in some detail the structure of grain marketing in Burkina Faso. We have tried to highlight the general framework for marketing activities. Regional differences, however, are extremely important. Marketing channels develop differently to adapt to different cultural, socio-economic and geographic characteristics. The next chapter focuses on the different ways in which market participants conduct business. The distinction we have drawn between the four types of marketing channels is essential for understanding the conduct (competitive and collusive practices) of these various participants.

TABLE 2.13

SUMMARY DATA ON PRINCIPAL CEREAL BANKS IN BURKINA FASO
(In the order in which the banks were established and financed)

Local Organization	Source of Funding	Storehouse Construction	Amount of Initial Funds (loans and gifts)	Main location of these banks	Notes on the current situation of these banks (Information from RR passes)
FOVODES (74-76)	OXFAM COE CCFD, etc.	1.5 million FCFA	30 tons	Mossi Plateau especially Ouaga, Kongoussi, and Koupéla	Lacks control. The gift of 30 tons failed and the storehouses are empty.
CIDR UGVO (ORD, 74/76)	FDR, FED, CNCA OXFAM	partial financing	140,000 FCFA[a]	Sahel region Dori and Gorom-Gorom	With good extension from the ORD these banks work well since financing doubled
PPIK (76-77)	PPIK - gift	by villagers	gift of grain delivered	Region of Kaya	Only distributes cereals. Most of the banks have failed financially
ADRK	ADRK - gift	by villagers	gift of grain delivered	Region of Kaya	SAME
CDRY (77-78)	OXFAM - gift	100,000 FCFA	gift of 250,000 FCFA	Region of Yako	SAME
PPIB	PPIB - gift	by villagers	gift of grain delivered	Region of Boulsa	SAME
SAVE THE CHILDREN/ FDR (77/78)	Private funds from USA and Norway; USAID	Financed by FDR	loan: initial fund of 1.3 million FCFA[b]	Region of Dori and North of Dori	Recent financing followed up with strong extension effort.
ORD PVOV (77/78)	Swiss funds	1.6 million FCFA	loan: 500,000 FCFA from the Swiss	Volta Noire and Hauts Bassins	Major activities are marketing cotton with SOFITEX and cereals with OFNACER
PDAOV (77/78)	FDR	750,000 FCFA	without financing	Volta Noire and Hauts Bassins	Little activity; with SOFITEX and OFNACER
FDR (79/80)	FDR (FEER), FAM	partial financing	loan: 1 million FCFA 80 sacks	Kaya, Kongoussi Po, Koudougou, Yatenga	Good cereal bank activity.
SAHEL (79/80) Dutch volonteers	Holland	partial financing	500,000 FCFA for 4 banks to start	Region of Sebba	Cereal banks in bad financial state. Extension work untaken recently by ORD.
USAID (79/80)	USAID and private US and Norwegian funds	no financing	loan: 1 million FCFA for 5 out of 6 years	Regions of Fada and Diapaga	Apparently very little success.

TABLE 2.13 (con't.)

Local Organization	Source of Funding	Storehouse Construction	Amount of Initial Funds (loans and gifts)	Main location of these banks	Notes on the current situation of these banks (Information from RR passes)
SIX S (79/80)	from various foreign non-government groups	partial funding work of villagers	loan: 300 sacks	Yatenga	These banks have had good extension and good success.
SAHEL SOLIDARITE	na[c]	na	na	Sahel	na
THIS	USAID	na	na	Sahel	na
COE	OXFAM and others	without local funds	loan: minimum of 500,000 FCFA	Koupéla and South of Kaya	Recent financial and management difficulties
ACDF	Canada	financed	loan: 2 million FCFA	Guéléoungo and South of Ouagadougou	
AFRICARE	AFRICARE	financed	800,000 FCFA	Seguénéga	
OXFAM	OXFAM	financed	700,000 FCFA followed by 1.06 million FCFA	Koupéla	

SOURCES: Communication with representatives of cereal banks and ORD agents, and various documents.

LEGENDE: Financing and Extension Organizations.
FDR: Fonds de Développement Rural, devenu FEER Fonds de l'Eau et de l'Equipement Rural
OXFAM
AFRICARE/PIS: Plan Intérieur de Séguénéga
SIX S: Se Servir de la Saison Sèche en Savanne et au Sahel)
ORD: Organisme Régional du Développement
FOVODES: Fondation Voltaïque pour le Développement et la Solidarité
ACDE: (Agence Canadienne pour le Développement de l'Enfance
CCFD: Comité Catholique contre la Faim et pour le Développement
CNCA: Caisse Nationale de Crédit Agricole
COE: Conseil Oecuménique des Eglises
IR: Institutions Rurales
FDC: Fonds de Développement Communautaire
PPIB: Plan de Parrainage International de Boulsa
PPIK: Plan de Parrainage International de Kaya
ADRK: Association pour le Développement de la Région de Kaya
CDRY: Comité de Développement de la Région de Yako
THIS: Training Homen in the Sahel
CIDR: Compagnie Internationale pour le Développement, Groupe français
SAHEL SOLIDARITE
SOFITEX: Société Voltaïque des Fibres Textiles
OFNACER: Office Nationale des Céréales
PAM: Programme Alimentaire Mondiale
UGVO: Union de Groupements Villageois d'Oudaian (Sahel)
RR: Reconnaissance Rapide
FCFA: francs CFA (50 FCFA = 1 franc français)

NOTES: [a]In previous years financing was either 140,000 FCFA or 33 sacks. Recently these have been actively financed.

[b]Moderate loans in previous years. Since 1983-84 the buying campaign was financed at 1.3 million or 126 sacks.

[c]Information not available.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

CHAPTER 3

THE DYNAMICS OF THE MARKETING SYSTEM

Chapter 2 focused on the who, what, when and where aspects of the grain marketing system. This chapter is concerned with "how" -- the dynamics of marketing activities. The guiding questions are: How does the market operate? How does that dynamic affect the participants? and What does it imply about the provision of marketing services in different regions?

The marketing system distributes goods across space, time, and people. All three of these dimensions must be considered when describing and evaluating the system. A marketing system has many different segments: collecting from producers, transporting, wholesaling, retailing, etc. Each can be considered as if it were a different industry. However, because the separate industries belong to a larger system, they must somehow be coordinated. Thus, in evaluating the marketing system, we examine the industries separately, and we look at the ways in which they are coordinated. The important issues to consider are:

1. What is the structure of each segment and how does it function?
2. What are the differences between firms in each segment?
3. What degree of vertical integration exists in individual firms, and how does this affect their position in the industry?
4. What degree of competition and collusion exists in each industry segment?
5. What are the barriers to entry?
6. How are changes in the system communicated?
7. What degree of integration exists across space? Across time? What differences exist between regions and what might explain them?

In a purely competitive market where numerous buyers and sellers come together unconstrained to exchange as they please, no person or group exercises enough influence to affect prices. The seller receives a fair return on his capital and labor; if not, he does not sell. Resources are allocated efficiently and price changes are reflected in changes in resource allocation. No one earns monopoly profits.

Whether one is a buyer or seller, power is gained either by banding together or by keeping others out. If buyers can act as a unit, they can lower prices by withdrawing their demand. Similarly, sellers can raise prices by controlling supply. The extent to which either group attains such control (intentionally or not) affects the structure of the market. Market structure affects the way business is conducted.

The major aspects of market conduct include the methods by which market participants compete, collude, and coordinate their activities. The results of these processes determine the terms of trade in exchange agreements. These dynamics of the market determine the allocation of profits between different participants.

The chapter begins with a brief discussion of how to evaluate the performance of a marketing system. Sections 3.2, 3.3, and 3.4 discuss the conduct of market intermediaries: methods of competition, collusion and coordination, respectively. Section 3.5 describes the factors affecting the formation of grain prices. Section 3.6 evaluates market integration -- spacial and temporal. Section 3.7 considers the changes in the marketing system over time, and Section 3.8 presents conclusions about market dynamics.

3.1 EVALUATING THE MARKETING SYSTEM

We have found evaluating market performance to be more of an art than a science. Although the theory about the analysis of industrial structure is clear, applying it to real marketing systems poses distinct problems, especially for systems in developing countries.

The methods used for analyzing the marketing system do not really provide proof of particular problems or lack thereof, but rather <u>indications</u> of their existence. Use of the tools requires data which often do not exist -- or are of questionable quality. The assumptions upon which the theory is based are usually not appropriate for developing countries. Finally, one almost always draws the conclusion that the marketing system is not perfectly competitive, and that markets are not perfectly integrated. Unfortunately, however, the theory provides no clear cut ways of deciding what levels of deviation from the competitive model are "close enough", or how much lack of integration is "too little"

to worry about. Therefore, the policy recommendations which can be offered depend on the analyst's value judgments.

In spite of these problems, but with special attention to their implications, the SCP paradigm and subsector analysis are the basis for our analysis of the marketing system. This section is devoted to a discussion of the theory. In the subsequent sections we have tried to present evidence on the key issues mentioned earlier. In drawing conclusions we try to avoid making sweeping generalizations where the supporting evidence is insufficient.

3.1.1 The Theory

As discussed in the Introduction, the structure-conduct-performance paradigm (SCP) is used to evaluate the performance of an industry.[1] Subsector analysis, based on SCP, was developed to evaluate performance of a subsector (where producers and consumers are separated by several layers of intermediate production -- transformation and transportion -- e.g., livestock, grain, etc.).[2] The structure of the theory of vertical market behavior is parallel to that of the theory of horizontal market behavior: market structure influences market conduct, and the two together affect market performance.

The concept of structure in a vertical market is similar to that of a horizontal market. The variables and relationships that indicate structure include:

1. the absolute number of buyers;
2. the absolute number of sellers;
3. the number of parallel channels that exist in a market;
4. the number of intermediate units that exist in a market channel, or the length of the channel;
5. the perishability of the product;
6. the number of stages that exist in a commodity subsector.

These are all relevant and identifiable for the grain subsector.

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[1]For an elaboration of the SCP paradigm, see any textbook on industrial organization, e.g., Scherer, 1980.

[2]For an explanation of subsector analysis see Marion, 1976.

It is the concept of conduct that differentiates the theories of vertical and horizontal market behavior. Conduct, as a characteristic of an industry, refers to the nature of the competition among buyers or sellers. For a vertical market, conduct refers to the coordinating activities between buyers and sellers; the type of bargaining or negotiating that occurs between transacting partners. It is the process that coordinates the competitive activities of buyers with the competitive activities of sellers. Therefore, the nature of horizontal conduct affects vertical conduct.

The array of coordinating activities depends heavily on the basic conditions of the subsector -- the technological level of production, transportation, and information flows, and the product characteristics. For a given set of basic conditions there is a continuum of coordinating practices, ranging from on-the-spot, not prearranged transactions, to increasingly specific contractual arrangements, to vertical integration through common ownership. The entire range can exist in a grain subsector.

Price, as a variable, has special functions in a market system. It is perhaps the most important signal in an industry. In a vertical system, where prices exist at all the different stages, the role of price differs from one coordinating practice to another. From spot transactions, to specific contracts, to vertical integration, the allocation function of price changes to one of score-keeping (dividing rewards between participants). Therefore it makes little sense to analyze prices at any stage in the marketing chain without understanding the coordinating mechanisms which brought them about.

The concept of performance is basically the same for both vertical and horizontal markets. It encompasses the goals of technical efficiency, allocative accuracy, progressiveness, and equity. Performance of a vertical market depends on both structural and behavioral variables. The standard for good performance is that quantity, quality, timing and location of products supplied match those demanded. How well supply meets demand (in all dimensions) depends on the decisions of the individual market actors. These depend on the decision environments in which they operate, which are affected by a

broad range of institutions and arrangements. More specifically, the decisions are influenced by:

1. incentives (prices, relationships between actors, security);
2. the flow of information (which affects knowledge, uncertainty, and communiction of incentives);
3. adequacy of inputs necessary to respond to incentives;
4. management alertness and ability.

Where activities within a subsector are linked by markets, one assumes that market prices provide coordination by the incentives or disincentives they represent. With perfect competition, perfect markets, perfect knowledge, rationality, and an unchanging environment, coordination would be easy. Such perfection, however, rarely exists. Imperfections and constant change characterize most subsectors in developing countries, making coordination a difficult and complex process.

The competitive model is the standard. If perfect competition exists at all steps in the marketing chain, both within and between markets, production and distribution will be efficient.

The conditions for competition within markets are that: (1) there are many buyers and sellers and none can influence price; (2) there are no barriers to entry into the market for either; (3) all participants have perfect knowledge of market conditions; and (4) all goods and factors of productions are perfectly mobile. Within a single market this results in the same price being paid by all purchasers. In the long run this price will be equal to the marginal cost of production (including marketing).

Competition between markets exists when: (1) goods can move freely between markets and (2) information about conditions in the two markets is freely available. When both these conditions are met, markets will be perfectly integrated. For such markets, when the price differential between two markets for a particular good is less than or equal to the cost of transporting the good between the markets, the product will not flow between them. When the price differential exceeds the cost of transportation, then the good will be transported from the lower-priced to the higher-priced market until the price differential in excess of transportation costs is arbitraged to zero.

In discussing the relationship among markets, Jones summarizes the factors that must be considered when examining market integration.

> In a theoretically perfect market, prices will reflect accurately all knowledge available anywhere in the system about present and prospective demand and supply for the commodity being traded, including location and magnitude of stocks, crop prospects, transport conditions, and availability of credit, and similar information about competing commodities. Although the perfect commodity market does not exist, some characteristics of price behavior that would be expected in such a market do provide measures of the performance of markets that are much less than perfect. They are: (1) the seasonal rise of price of an agricultural commodity will be approximately equal to the cost of storage, less the returns from maintaining transaction balances; (2) prices in major markets will move in concert, except as the cost of transport between them changes; (3) the spread between prices in two markets will approximate the difference in costs of moving supplies to them; and (4) prices will change only when new information enters the system (Jones, 1972, p. 139).

These characteristics of integrated markets can be used as criteria with which to judge how well markets are integrated.

The standard method for examining spacial market integration is to look at the correlation coefficients for prices in different markets. Evidence on the above factors may explain why the correlation coefficients between prices in particular markets are significantly different from one.

3.1.2 Critiques of the Theory and Its Application

As signaled earlier, there are a number of important critiques of the SCP paradigm, subsector analysis, and their applications. Before using these theories it is important to understand their limitations. Five major criticisms have been offered:

1. The SCP model is inappropriate for analyzing marketing systems because they are inherently dynamic but the model is based on a static concept.
2. Correlation coefficients are inadequate as proof of market integration or competition.
3. Conclusions from the analysis of marketing margins ultimately rest on value judgments about acceptable deviations from cost or on explanations of why margins switch between profit and loss.
4. The tools of correlation coefficients and marketing margins are used to conclude that markets are competitive and are

therefore performing well when in fact they may not be (Harriss, 1978 and 1980 a, b).

5. The data presented do not support the conclusions drawn from them.[3]

In struggling with our use of the neo-classical paradigm for evaluating the marketing system in Burkina Faso we offer another critique to add to the above list:

6. The theories are based on the assumptions that market participants -- producers, traders, and consumers -- are homogeneous (face the same conditions), and that they have perfect knowledge at all times about all aspects of the marketing environment.

Without these assumptions the theoretical conclusions about market efficiency no longer hold. These conclusions are the yardstick against which market dynamics are evaluated. The assumptions rarely hold true in reality, especially in developing countries. What does this imply about the conclusions about market "efficiency" which we draw when applying the theory?

The general problem is that the more differentiated the population, the more likely it is that the objective/conventional measures of marketing efficiency (margin analysis) will be difficult to apply and thus the more likely it is that the results will suggest that the system exhibits major inefficiencies or that the results will not make any sense. Therefore, we conclude that while the theory remains valid, the appropriateness and practicality of applying conventional analytic tools is seriously reduced when the above assumptions do not hold -- i.e., in developing countries.

Let us take the example of the comparison of costs of storage to returns to storage as a measure of the efficiency of the market in distributing supplies over time. In Burkina Faso, as in other LDCs, the interest rate is often thought to be the most important component of storage costs, ranging upwards to 100% per year or more according to some

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[3]This, however, is not a critique of the usefulness of SCP as a paradigm. Rather, it is an indictment of researchers who have either misrepresented their data in their conclusions, or felt the need to draw more sweeping conclusions than were justified.

studies.[4] Since the range of interest rates usually goes from zero, or even negative in real terms, to very high levels, what interest rate should be used for the calculations? It is also asserted that interest rates tend to be inversely correlated with wealth/status. Is the true interest rate some weighted average? Or is any kind of averaging meaningless since the vast majority of traders will plan and participate in the market on the basis of their perception of the interest rate, which is different from the average? Price increases of 50% over the course of a season are accordingly very profitable for the large trader (who faces lower rates); about right for the medium trader; and a losing proposition for the small trader (who faces the highest rates). For the medium trader the market is efficient, but for the large and small traders we would conclude that the market is inefficient, but for opposite reasons.

We also commonly observe changes in seasonal patterns from year to year. Part of this certainly relates to knowledge being imperfect, but we will hold to the perfect knowledge assumption for the moment. Major variations in seasonal patterns might still be expected in response to changes in crop size in a highly differentiated population. In a short crop year large producers would be relatively more important in terms of the marketed surplus than in a good year since large numbers of small producers would not have enough even to meet home consumption needs. In this situation, the storage costs/interest rates as perceived by the large farmers should prevail. Returns to storage can be lower (following the major upward leap of prices once the size of the harvest was known); conversely in a good year returns to storage need to be higher since small producers are relatively more important. The picture becomes even more complex when one considers the effect of the assertion that small producers tend to market heavily in the early part of the season and large producers later. Just when is the market supposed to be operating efficiently, and for whom?

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[4]This is obviously more true for commodities such as sorghum and millet in the Sahel since storage losses are generally asserted to be low (about 10%) and the amortized value of storage facilities probably does not exceed 1 or 2% of the value of the crop contained therein.

One might further hypothesize that the neo-classical paradigm works best where the population is not only homogeneous, but also generally rich, with no serious capital constraint. Capital constraints may change market behavior patterns radically as the Burkina Faso studies illustrate. Individuals are constrained from participating in the market even when their perception tells them it would be profitable to do so. The major problem or source of inefficiency in markets in Burkina Faso may not be a matter of imperfect knowledge, but limited ability to act on the knowledge that is available. The fact that the largest group of traders -- the exporters -- who are in the best position to act when the opportunity arises, generally stay out of the grain trade altogether (at least in part because of constantly changing government regulations) may contribute to an observed degree of inefficiency in the system at least as measured with conventional tools.

Unfortunately, we do not have a better set of tools to offer. We propose to overcome the difficiencies of the existing tools by using them with caution, and by bringing to bear non-quantitative data which supplement and often explain the quantitative results.

3.1.3 Analyzing Market Performance

Given the above critiques we do not feel that conclusions about market efficiency are appropriate. An analysis of market dynamics -- conduct -- will be undertaken. Policy recommendations will be based on that analysis.

A complete analysis of market conduct should include:

1. Analysis of competitive, collusive, and coordinating practices of market participants;
2. Analysis of spacial and temporal integration;
3. Analysis of marketing margins;
4. Analysis of long term trends.

Competitive, collusive, and coordinating practices of market participants can be understood by observing and interviewing different types of participants in marketing activities. This must be done in as many different locations as possible. The regional results presented in Volume II are the basis for our analysis.

Correlation coefficients for prices in different markets throughout the year are indicators of spacial integration. Considered in

conjunction with information about the existence of trade between particular markets, these correlation coefficients indicate areas in which information does not flow, or in which there are other barriers to the exchange of goods. We are able to calculate correlations for many market pairs. We scrutinize the results for indications of a "break-down" in the marketing system. The correlations can also be used to corraborate other analysis.

An analysis of marketing margins allows us to compare margins with costs in order to evaluate the profit margin. Such an analysis requires detailed data on marketing costs of particular merchants. These data are extremely difficult to obtain. An alternative approach (best used to complement cost calculations) is to calculate price margins (potential marketing margins). These we can calculate for certain pairs of markets. Considering them in conjunction with data on market structure and trade flows, we can draw some conclusions about profits on particular trade routes.

An analysis of seasonal price changes compared to the cost of storage would indicate whether or not (and at which levels and locations) there are excess profits in the storage function. To perform this analysis requires several years of monthly prices for different levels of the marketing chain in particular markets (Timmer, et al., 1983, p. 174).[5] Unfortunately, adequate time series data for prices do not exist for Burkina Faso.

An analysis of long-term trends requires time series prices and marketing cost data, as well as less quantitative data from market participants who have been engaged in market activities for a long time (at least 10-20 years). Obviously the quantitative data do not exist for Burkina Faso. From interviews with traders and some government officials we have been able to draw some conclusions about long-term trends in grain marketing.

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[5]The analysis proposed in Timmer, et. al, assumes that there is no seasonal change in the cost of transport. If transport costs do change, as is the case for many routes throughout Burkina Faso, prices must be adjusted for that before creating price indices.

The reader is reminded that the qualitative data used in the following analyses were collected during the study period in all the regions of Burkina Faso through the rapid reconnaissance interviews. Details for each region are presented in Volume II.

3.2 COMPETITION AMONG INTERMEDIARIES

Competition exists at each segment in the marketing system. Theory suggests that as competition becomes more intense the more inefficient firms are driven out of the market, and prices more closely reflect costs.

At every segment of the marketing chain, intermediaries compete with each other. The areas of competition differ according to their place in the chain. Of course the methods of competition are adapted to the particulars of the marketing situation. This section discusses the ways in which intermediaries compete for market share.

There are three basic levels at which competition occurs.

1. Buying grain from producers;
2. Buying grain from intermediaries: vendeuses, local traders, cereal banks, etc.;
3. Selling grain to consumers.

Price and nonprice methods of competition are discussed separately for each level. First we discuss the methods by which market entry is restricted, and thus competition diminished.

3.2.1 Barriers to Market Entry

There are five generic ways of limiting competition which exist throughout Burkina Faso:

1. the yearly buying license (patente);
2. the daily market tax;
3. the local traders' union;
4. ethnicity and family connections;
5. capital.

3.2.1.1 The buying license (patente)

The right to trade in large quantities is given by the government. Any individual who wishes to trade grain commercially is required to be licensed. Separate licenses must be purchased for import/export and for internal trading. There are two parts to the cost of the license: a

fixed amount (le droit fixe) and a proportional one (le droit proportionnel). Both are based on the annual gross revenue of the commercial operation and its location. (See Table 3.1). There are eight categories of traders, from those having gross revenue of "less than 500,000 FCFA annually," to those receiving "more than 50 million FCFA annually." A trader must declare his gross revenue, although there is no mechanism for checking it. Very few traders declare a gross revenue above 2 or 3 million FCFA.[6]

In Manga, when interviewed, traders were emphatic about the need to buy the patente. When asked whether anyone with enough money could buy grain in a market, they indicated that as long as the person purchased a license, there would be no problem. A new trader might be able to buy once without having the license, but other traders would not allow him to buy a second time without the proper credentials. In other markets where traders are less organized than in Manga, this requirement may be felt less acutely.

Sherman (1984) discussed a trader in Manga who explained that his agents had been given trouble by regular merchants before he purchased a license. He was thus forced to obtain one. She experienced this herself when sending a young man into the market to purchase grain. He was threatened by the market traders who thought he was trying to trade. They told him he would not be allowed to load even one sack onto trucks leaving for Ouagadougou.

The only way to avoid buying the license is to purchase outside the markets. Often there are people along market access roads prepared to buy grain from farmers before they arrive at the market. Some of them are licensed, but many are not. Those who do not have a license are considered thieves by the licensed merchants.

3.2.1.2 The market tax

Each market has a controller or market representative, a person whose job is to collect the market tax (droit de place du marché). The tax is a sum charged each market day to all sellers without yearly licenses. The sum varies from 5 to 100 FCFA depending on the value of the goods

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[6]At a rough figure of 10,000 FCFA per bag of grain, this represents a trade of 300 bags, or 30 tons (10 large truck loads). From our observations there are many traders whose operations are larger.

TABLE 3.1

LICENSE FEE FOR TRADERS:
IMPORTER, EXPORTER, AND IMPORT-EXPORT

Portion of gross sales subject to license (in millions of FCFA)		Amount of tax determined in FCFA
Greater than	Less than or equal to	
	2	4,000
2	5	10,000
5	10	18,000
10	20	36,000
20	30	48,000
30	40	60,000
40	50	72,000
50	100	108,000
100	200	150,000
200	300	200,000
300	400	300,000
400	500	400,000
500	600	500,000
600	700	600,000
700	800	700,000
800	900	800,000
900	1,000	900,000
1,000	1,100	1,800,000
1,100	1,200	1,100,000
1,200	1,300	1,200,000
1,300	1,400	1,300,000
1,400	1,500	1,400,000
1,500	1,600	1,500,000
1,600	1,700	1,600,000
1,700	1,800	1,700,000
1,800	1,900	1,800,000
1,900	2,000	1,900,000
2,000	2,100	2,000,000
2,100	2,200	2,100,000
2,200	2,300	2,200,000
2,300	2,400	2,300,000
2,400	2,500	2,400,000
2,500	2,600	2,500,000
2,600	2,700	2,600,000
2,700	2,800	2,700,000
2,800	2,900	2,800,000
2,900	3,000	2,900,000
3,000	3,100	3,000,000
3,100	3,200	3,100,000
3,200	3,300	3,200,000

LICENSE FEE FOR TRADERS WHO MAY NOT
IMPORT OR EXPORT
(FCFA)

Total annual transactions			Fixed Annual Fee	
Less than	Equal to or greater than	Class	Ouagadougou Bobo-Dioulasso	Other Locations
	50 millions	other	96.000	72,000
50 millions	25 millions	1st	72.000	54,000
25 millions	15 millions	2nd	48.000	36,000
15 millions	10 millions	3rd	24.000	18,000
10 millions	5 millions	4th	14.400	10,800
5 millions	3 millions	5th	12.800	9,600
3 millions	1,5000,000	6th	6.400	4,800
1,500,000	500,000	7th	3.200	2,400
500,000		8th	1.600	1,200

PROPORTIONAL FEE

1 - Other Class to Class 5	OUAGADOUGOU	: 12 %
	BOBO-DIOULASSO	: 10 %
	OTHER LOCATIONS	: 8 %
2 - Class 6 to Class 8	Exemption	

SOURCE: Ministère du Commerce document.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

being sold and the size of the market.[7] It is possible to avoid the tax by selling very early in the day, before the representative arrives, or by dealing outside the market place.

3.2.1.3 The traders' union

Within each major city and sous-prefecture there is an association (syndicat) of traders which belongs to the national union of traders. Within this union there are subassociations for grain wholesalers and for retailers. The local associations set policy for grain trading in all markets within their jurisdiction. Most markets have their own association as well. Any grain trader can belong. Having the patente is the main requirement for membership. Some groups also have a small membership fee.

In smaller, less important markets the traders' association is less formally organized. The agreements between traders are less formal, more in the form of an "understanding" (entente), and participation does not require having a patente. Often the grain traders, transporters and other traders have joint meetings.

3.2.1.4 Ethnic and family connections

Although few traders cite ethnic or family connections as essential for success in the trading arena, it is clear from the description of how traders break into new areas (e.g., Yatenga traders building a clientele in the Volta Noire), or how they start their businesses, that these connections are important. It is easier to establish a trading relationship with someone from your family, region, or ethnic group, although not necessarily safer. We heard many stories of loan defaults between people of the same large family.

3.2.1.5 Capital

The fifth, and perhaps most important factor restricting market entry is capital. It is the main source of market power. Traders, whether they are buying or selling, effectively wield market power by owning more of a relatively limited resource than most others.

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[7]Different bush market controllers explained that women who sell small amounts of condiments are charged a lower tax than people who sell grain, animals, and prepared foods.

In the next section we will see that capital and transportation (which requires capital), information and knowledge are important resources for competing effectively. This is true for producers, consumers, and intermediaries.

Access to the market by producers and consumers is not restricted or controlled in any formal way. There are no taxes for selling to a trader or buying from one. It is clear, however, that someone with capital has more choice in making marketing decisions.

3.2.2 Buying Grain from Producers

Grain is purchased directly from producers by village resident buyers (who work for regional and national traders) and local agents, by local traders and vendeuses, by village groups, by OFNACER, and less commonly, by regional or national traders. All of these competitors use price to attract the producer to sell to him/her.

3.2.2.1 Competition by price or measuring unit

Each buyer has his/her measuring units for purchasing grain. Often the price for a unit, for example the tine, is the same with different buyers, but the actual volume purchased differs. A particular buyer may attract new sellers with a smaller unit, but once the seller has begun to sell to him regularly, he will switch to a larger receptacle for measuring. This is true for price competition at all levels of trade.

Table 3.2 describes the different measures used for trading grain in different regions. Each of the regional reports (Volume II) discusses measuring units in detail. A producer who takes his grain to the market may have a choice of several (in some places many) buyers. Obviously, if he does not like the price offered by one trader he can negotiate with another, until he finds a satisfactory deal. When traders from outside the region come to the market they usually offer a slightly higher price per unit (say 50 or 100 FCFA/tine) in order to purchase as much grain as quickly as possible.

In general, price competition is stronger at the market than in the village. In areas like the Volta Noire, where many outside traders maintain village buyers, price competition within the village may be fierce. Each resident buyer tries to be seen as the "best," in offering slightly higher prices in order to collect more grain, or by giving

TABLE 3.2

MEASURING UNITS

Measures	Size/Appearence	Approximate Weight	Equivalence used by traders	Where and/or when used	Used by which intermediaries?	Remarks
Ladles 5 FCFA 25 FCFA	Small ladles "calebashes"; Large variety; made by hand	Purchase: 50 to 70 gr Sale: 30 to 50 gr	Fixed price; the weight varies to adapt the price per kg, from season to season	All markets but especially those in deficit regions, particularly during the hungry season	All vendeuses, sometimes small traders in Yatenga and East	Filling technique very important; 25 F ladle rarer at Tougan
Bowl	Small plastic bowls of different sizes	600 to 400 gr		rather frequent	Vendeuses and small traders	
Small Tomato Can Medium Tomato Can		800 gr 1 kg		Frequent in urban markets; retail in deficit region markets	Mostly for rice but also other grains	
Tomato Can	Empty tomato paste can 5 kg size, often tampered with	1.9 to 2 kg 1.7 to 1.9 kg	Purchase: 9 TC for 1 tine C or D Sale: 10 TC for 1 tine C or D	All markets but especially Volta Noire (south: Kouka, Solenzo)		
Yoruba Plate	Enamelled metal plate	Mainly sale 2.3 to 2.4 kg	42 to 38 plates for 1 sack	Regions of Guéléoungo, Pouyténgа, Est, Centre-Sud, Centre and north of Volta Noire	Mainly by vendeuses for sale to consumers	Yoruba plates are apparently no longer made.
Sankinsé Plate	Larger	Mainly purchase 2.05 kg	40 to 36 plates for 1 sack		By vendeuses and all traders for purchase from producers	

TABLE 3.2: MEASURING UNITS (con't.)

Measures	Size/Appearence	Approximate Weight	Equivalence used by traders	Where and/or when used	Used by which intermediaries?	Remarks
Large Plate				Region of Pisila		
Small Pail	Narrow and rather high, plastic pail	5.5 kg with hat	20 pails for 1 sack	Regions of Tchériba and Safané only	Small and medium traders	
"33" Pail Plastic Pail	Plastic basket or metal pail		1 tine C or D	Region of Koudougou (Réo) only	Small and medium traders	
Tine A	Tine made for selling	Sale: 14 to 16 kg	Sale: 6 tines for 1 sack	Mainly Ouagadougou and Bobo-Dioulasso and large markets; all markets	Sale to consumers by medium and large traders	
Tine B	Official tine without hat	Resale: 16 to 16.5 kg	Sale: 6 tines for 1 sack	Ouagadougou and Bobo-Dioulasso and rather controlled markets	Sale to consumers by medium and large traders	
Tine C	Tampered official tine with hat	Purchase: 18 kg Sale: 18 to 20 kg	Purchase: 6 tines for 1 sack Sale: 5 tines for 1 sack	All markets	Purchase from producers and sale to intermediaries in less controlled markets	
Tine D	Local tine with hat (made for buying)	Purchase: 22 to 24 kg Sale: 20 to 22 kg wholesale	Purchase: 5 tines for 1 sack	Volta Noire, Hamalé	Purchase from producers outside of markets by vendeuses and traders	

TABLE 3.2: MEASURING UNITS (end)

Measures	Size/Appearence	Approximate Weight	Equivalence used by traders	Where and/or when used	Used by which intermediaries?	Remarks
Sheaf	Sheaf of millet stalks attached together; variable weight	14 to 24 kg	Equal to the tine and varies in the same way	Sahel, regions of Dori and Djibo	Transactions between local producers and consumers only	
Sack 1	Jute sack	80 to 90 kg		Sale in markets	Medium and large traders for sale to consumers	
Sack 2	Jute sack	90 to 105 kg		Purchase in markets	Medium and large traders for sale and purchase between intermediaries	
Sack 3	Jute sack	105 to 120 kg		Purchase in the bush, Volta Noire, East, etc.	Medium and large traders for purchase from producers or small intermediaries	
Sack Ghanéen	1 sack sewn from 2 jute sacks	120 kg and above	Purchase from producers	Ghanéen border, Hamalé, Guéléwongo	Medium and large traders	

SOURCE: Observation during rapid reconnaissance passes.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

customers small gifts, such as 50 or 100 FCFA added to the negotiated price, to create some sense of future obligation.

Price competition through the measuring unit is the most dramatic between those who buy with the official units and those who use the traditional or local unit. Local traders compete with OFNACER by offering a higher price per tine -- but they buy with the local tine, which is 20 to 50% larger. The size of the local tine is relatively constant within a particular market, but varies considerably between markets.

Interviews with producers indicate that they are aware of the difference between the size of different types of measuring units. The official tine is not the same size as the farmer's tine, which is not the same size as the local trader's. Farmers usually measure their grain before taking it to market.

Competition does exist between local traders based on the size of the measuring unit. Even casual observation shows that traders "work" their measuring units to increase the volume they hold without it showing. Local traders thus try to offer a better price per unit but recuperate on the weight of the unit purchased.

Most village groups buy with the local unit, except if purchasing directly for OFNACER, and especially if supervised by a member of the CDR.

OFNACER loses in the price competition on several counts because official prices do not change during the year and the standard unit differs from the traders' local unit. Local prices compensate the producer for storage. Thus, especially after February, it is difficult for OFNACER to purchase from producers. It is worth noting that although the mechanisms by which traders compete with OFNACER are similar regardless of the relative size of the harvest, traders can be more effective in a year like 1983/84 when grain was scarce. Early in the year, when market prices are low, traders compete with OFNACER by using units which are more familiar to the farmer. They often offer a higher price per tine for a proportionally larger tine.

3.2.2.2 Nonprice competition

At this level there are six other ways in which buyers try to compete for customers: by credit, relationship, gifts, proximity (travel), discretion, and availability of grain. Each of these factors plays a

role in competition. Their relative importance depends on the individual buyers and sellers.

- Relationships, Credit, and Gifts

All three of these aspects of nonprice competition are intimately related. The relationship between the producer and buyer is important at all levels.

Gifts, such as the kind mentioned earlier, help build relationships. The importance of the relationship comes from the fact that the producer feels that if the trader has some specific relationship with him, he will have a better chance of receiving credit from the buyer, should he ever need it.

People prefer to sell to someone from the same region or village, or someone they know -- all other factors being equal. This is particularly important for new traders who want to break into the grain trade. They have a disadvantage buying grain in rural areas because of the importance of established relationships between farmer and buyer. In the west some Mossi merchants have managed to break into the grain trade by establishing relationships with farmers from among the Mossi migrants who either are relatives or are from the same village as themselves. Such a farmer will buy on behalf of the trader. To forge this relationship some merchants may even finance the farmer's migration.

Credit is one of the most important services a buyer can offer a producer. The intense competition in some areas has forced the extension and development of this service. It occurs in several forms.

Advance sales, though technically not credit, are considered a form of credit by the producer. For the trader it is rather risky but very profitable. The trader purchases a fixed amount of the farmer's future crop at half its expected harvest price. It is difficult for local agents and traders not to get involved in this form of credit if they want to keep their customers. Many, however, experience considerable defaults after a bad harvest. As a result, this practice is most prevalent in heavily surplus areas, such as the southern and western Volta Noire, and Hauts-Bassins. It used to occur a lot in marginally surplus, now deficit areas (for example, the regions near Koupéla, Tcugan, Yako, Kaya and Ouahigouya), but as a result of several consecutive bad harvests it has decreased in importance in those areas.

There are also more conventional forms of credit. The trader will sell the farmer grain on credit late in the season, expecting to be paid after the harvest. This type of credit is extended mainly by local traders -- those who have grain to sell. Resident buyers usually don't have commercial grain late in the season, and the vendeuses cannot afford to offer this type of credit because of their limited capital.

These types of sales credit allow the local traders to compete effectively with nonlocal traders and OFNACER, who do not extend credit, as well as competing with some village groups.[8] Local traders have a sort of monopoly on the extension of credit.

An additional point in favor of getting credit from a local trader rather than a cereal bank (though the latter's rate is undoubtedly better) is the importance of discretion. The relative secrecy of a transaction with a trader compared to the visiblity of a loan with a village group is highly valued by the producer. This becomes even more important if he must default.

Another form of credit available from a trader is a consumption loan. This way of borrowing money, although similar to sales credit, is not associated with a grain purchase. A good client will have a better chance of receiving this sort of loan.

- Proximity and Transport

There are four places where grain is generally sold: the producer's compound, the buyer's compound, along the road to market, and at or near the market. It is often advantageous for the producer to be able to sell near his own compound -- either because he has a lot of grain to sell and transporting it would be expensive, or because he has very little to sell and it is not worthwhile to go far to sell it. In these instances in particular, an intermediary who buys in his own village has an advantage. Some local traders especially the vendeuses and trader's assistants buy along the side of the road on market day. They try to get the producer's grain before he/she gets to the market. This is an advantage for the producer who would rather not go to the market. Some

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[8]There is a tendency for cereal banks to avoid extending credit since overextension of credit is the reason most frequently cited for their failure. OFNACER sometimes extends credit to village groups but not to individuals.

traders place advance men (usually children) along the road near the entrance to the market to guide sellers to their stalls.

Providing transport is an important way that local agents and traders compete in surplus areas. In regions where there is less marketed grain, outside traders do not usually find it worthwhile to develop methods for purchasing in the bush (going to villages), but prefer to wait for the producers to bring their grain to the market. Thus in the less surplus areas local agents, traders, and vendeuses provide the transport service by visiting the producer at home and picking up the grain they have bought. This also presents an advantage for the trader in terms of the measuring unit, since he brings his choice of receptacle with him.

- Availability of Grain/Ability to Purchase

This refers to the availability of grain during the hungry season (soudure), when grain producers may have run out of their own stock and need to buy. When producers decide on which buyer to sell to, they may consider whether that buyer will be able to "sell back" to them during the soudure. Obviously this is a more important service in less surplus areas. It is an important reason for establishing a cereal bank in an area, so that not all the grain that is sold leaves the region.

Local and regional traders with enough capital to invest in some storage are the only ones who can offer the permanent availability of grain. Some local agents may also work as sales agents for a large regional trader in deficit regions (as is the case in Djibo and Baraboulé). The person who has grain when others do not leaves the producers with the impression that he is the "grain provider" of the region, which encourages producers to invest in establishing a relationship with him.

The converse of the importance of grain availability for purchase is the ability of the merchant to purchase. As Saul points out, an important factor in building permanent relationships with producers who have regular and large supplies is the assurance of buying his or her grain at any time of the day or year at the going price. This may be a problem for operators in villages because they usually have small operating funds. They are less frequently able to absorb a large purchase either at the end of the day or at certain times of the year.

To help a client, the trader may have to buy even when he/she does not need grain. Obviously this is an advantage for the largest, best endowed traders.

3.2.2.3 Summary

The producer considers many factors when deciding to whom to sell his/her grain. Price is by no means the only issue. He must weigh price differences, the relationship with the buyer, and the amount of travel (cost).

Obviously, the most important factor is different for each seller and may vary with the size of the transaction and time of year. For a large sale, price may be more important.

The intermediaries, who are all trying to buy as much grain as possible, use the above factors as best they can to attract sellers. It is a monopolistically competitive market.

3.2.3 Buying Grain from Intermediaries

In the marketing chain from purchasing from producers to selling to consumers (refer to Figure 2.4), one intermediary buys grain from another, both when it is being collected from a producing region and when it is being redistributed for sale in consuming areas. At each level there is both price and nonprice competition.

After grain is collected from local buyers in producing areas it is usually sold to another intermediary. At this level competition for the accumulated grain exists between regional and national traders, village groups, and OFNACER. Even the local agents commissioned by specific traders are courted by others. Regional and national traders will often try to outbid each other to win the local agent for their own business.

In a consumption region, in order to supply the region, local intermediaries and village groups must purchase grain from larger traders, regional traders, or perhaps OFNACER. In a few deficit regions there are distribution channels similar to the local agent/village resident buyer connections of the surplus regions. In these, however, traders who sell grain must either purchase it themselves in the surplus regions, or buy it from regional or national traders. As with purchasing from producers, there is price and nonprice competition.

3.2.3.1 Price competition

There are three ways in which traders who buy from intermediaries compete with each other using price; by:

1. offering a higher price per unit;
2. agreeing to use a measuring unit which is more favorable to the seller;
3. providing the jute bags for the purchased grain -- worth about 150 FCFA each (used).

3.2.3.2 Nonprice competition

Traders have numerous nonprice methods of competing with each other for the intermediaries' grain. The major categories are: relationship, financial arrangements and promises , payment of storage fees, providing transport, and sharing information.

- Relationship

As with all aspects of trade, the relationship between the trader and the intermediary can influence the intermediary's choice of buyer. It is an advantage if they are from the same ethnic group, village or part of the same family. As with the producer/intermediary relationship, these characteristics increase trust. The intermediary is also interested in building a relationship with a trader who may lend him money, should the need arise. The potential for credit with flexible reimbursement terms will be an important factor in selecting a buyer for his grain. The trader may encourage this relationship with gifts.

- Financial Arrangements and Promises

Traders who finance their own chain of intermediaries compete for local agents by offering higher commissions for grain that is collected. In addition to fees the trader may promise to help the local agent get his own business started in the future. A similar type of competition exists for apprentices who are usually paid some salary and/or given a living allowance.

- Transport

There are seasonal shortages of transport, especially in surplus areas like the Volta Noire. Owning a truck or having the means to rent one can give a trader an important competitive edge. The owner of a truck has several advantages: (i) he has available transport when he needs it and doesn't have to waste time looking for it; (ii) his

transport costs are lower per bag;[9] (iii) he can influence other aspects of trade, such as prices, because he controls transport, an essential resource for other traders. He also has an advantage vis-à-vis agents and village groups based on transport capability and proximity.

The importance of transport to influence in other areas should not be underestimated. In Pissila, for example, the major trader owns a large truck. When he goes to another area to buy grain, he rents space in his truck to other Pissila traders. He can enforce his preferred selling price in Pissila by the implicit threat of withdrawing the availability of his transport to traders who do not comply.

Transport may also be used as a way of maintaining a relationship with a local agent or trader. The outside trader may give him a mobylette or motorcycle to facilitate collecting grain. We heard of one trader who had bought a pickup truck for use by his coordinator. While these may be considered simply "implements of the trade," they are so useful for other activities that they are also "perks."

- Information

Up-to-date information about market conditions is important for the trader to maintain his competitiveness in the market. The more information he has about prices in other places, the better he can judge where he should buy and what prices he should pay. Obviously it is important to know the price being paid by his competitors. The trader can use this information to compete with other traders. The local agent can use it to be able to compete better for producer's grain, as well as to increase his own profit margin vis-à-vis his patron. Good information about supply conditions in different areas, both temporary and more seasonal, enables traders to move agents to areas where grain is more plentiful thus making better use of his agents' time.

3.2.3.3 Summary

Among traders who are collecting grain in producing regions, competition among intermediaries is oriented toward obtaining as much

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[9]Owning transport is risky because of the high incidence of breakdowns and the expense of repairs, but it is lucrative.

grain as possible and maintaining a regular supply. Traders compete through the price and support services they offer.

The factors involved in competition at the level of redistribution are similar, but the emphasis is different. Wholesalers want to maintain a regular group of retailers who buy from them and retailers want a reliable supply. This is particularly important when there is a shortage. Wholesalers compete with each other, not only with price and support services, but also on their ability to supply their customers. Nonetheless, competition at this end of the chain seems somewhat less fierce.

3.2.4 Selling to Consumers

Grain is purchased for consumption in both rural and urban areas. The means of competing for consumers are similar. In rural areas grain is retailed by village groups, OFNACER, regional traders, local agents, local traders, and vendeuses. In the urban areas the list of competitors includes all but the village groups.

3.2.4.1 Price competition

The retail market is segmented according to the unit of sale. Traders who sell in units of a sack and a tine compete for one group of customers, and those who sell in units of a plate and a ladle for another. Within each segment there is strong competition based on prices and/or measures.

Although there is a clear price discount for larger purchases, many consumers cannot afford to buy a sack or tine at once. The vendeuses, although not competitive with price, have a clientele who prefer to buy in very small quantities.

OFNACER sells at a fixed price, which is the same throughout the country and during the entire year. It is announced in March when OFNACER opens its sales centers. At that time the free market price throughout most of the country is higher than the official price. On the basis of price alone, OFNACER should compete effectively with the private sector, but because its mandate is politically, rather than commercially based, it is not concerned with competition. In general it does not perceive itself as "competing" for buyers.

The cereal banks are similar. They set a price that includes a small margin over their purchase price. They do not actively compete for buyers.

Price competition is fairly stiff, especially in the cities. Since much of the grain that is for sale at any one time has been purchased recently, the purchase price has a major affect on the sale price. Thus, traders who buy at lower prices (including marketing cost), can offer grain at a lower price, and thus attract customers quickly. This is particularly important since quick turnover is the name of the game for most traders (especially those with small capital funds). We heard in Ouagadougou and Dori, for example, that when a trader offers grain at a particularly low price (because he has found a cheap source), other retailers will group together to buy his entire stock and sell it at the "going price," rather than taking the chance of losing customers to him.

There are a number of ways by which traders compete indirectly on price via the quantity they sell. In order to attract customers, many traders tell consumers that they sell especially large or full measures. Techniques for making the sack appear very full are well known among traders. The vendeuses attract customers by giving an additional ladle or an extra handful. At all levels of trades, small gifts of money are a common way to attract customers.

3.2.4.2 Nonprice competition

There are a number of ways in which private traders compete for customers. Obviously these also explain why people do or do not buy from OFNACER or cereal banks. They are: 1) relationship, 2) credit, 3) availability of grain, 4) proximity/access, and 5) quality of grain.

- Relationship

The relationship between the trader and consumer is important for attracting customers. This is most important because of the customer's potential need for credit -- credit for buying grain as well as money for other purposes. The closer the relationship, the more likely a customer is to be able to ask for credit and receive it.

- Credit

Of all the nonprice means of competition, this is the one most often mentioned by consumers, especially in urban areas. It is very common

practice for traders to sell grain to consumers on credit. Those consumers who receive a monthly salary often have a revolving credit arrangement with their supplier. The price is not necessarily the same for grain purchased on credit and that paid for with cash.

Traders dealing with rural consumers also compete by offering credit -- though they are somewhat less likely to be repaid. Those who can offer credit are likely to have a larger clientele.

- Availability of Grain

There are seasonal as well as occasional shortages of grain. Customers prefer to buy from, and establish commercial relationships with, traders who are most likely to have grain throughout the year and when others do not. The importance of this factor gives traders with a larger capital base an advantage vis-à-vis other traders.

- Proximity/Access to Transport

As with traders buying from producers, traders selling to consumers also compete by their accessibility. The closer the trader, the less the grain has to be transported. This is important because of the time and the cost of transport. Thus, traders tend to have a physical range in which they compete. Vendeuses, for example, compete with the other vendeuses in their market or the immediately surrounding area. The larger the unit of sale, the wider the region of competition.

Traders who sell by the sack may offer delivery as a means of attracting clients. This saves the customer who does not have a vehicle the cost of renting a cart, a taxi or other means of transport.

- Quality

The quality of grain varies based on the area in which it is grown (soil and seed) and the length of time and quality of storage. Some consumers prefer the taste of grain from one region over another. Obviously they prefer to buy from traders who purchase in those areas or have a supplier who does. There is a general perception that OFNACER sells a lower quality grain.[10] Very few consumers, however, cited quality as a reason for choosing one trader over another.

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[10]This is true for the grain OFNACER receives as food aid and then sells. It is not generally true for the grains it purchases locally, although sometimes local grain spoils during storage and is sold at concessional prices.

3.2.4.3 Summary

There are two distinct market segments for selling grain to consumers: selling in small quantities, a few plates or ladles, and selling a sack or several tines at once. Within each segment competition is fairly strong, especially in urban areas. Nonprice methods of competition are very important. For larger purchases in particular, the possibility of purchasing on credit is very important. Other factors such as the future availability of grain and the trader's proximity are also important.

3.3 COLLUSION

3.3.1 By Intermediaries

The previous section discusses many ways in which traders compete with each other at all levels of trade. This is not meant to imply that markets are entirely competitive. The research of both Dejou and Saul (Volumes II and IV) indicates that there are collusive agreements among intermediaries. Traders are aware that competition for grain is fierce, especially in surplus areas. They attempt to limit the effect of that competition by agreeing on maximum purchase prices to be paid to farmers, and/or minimum sale prices to charge consumers. It is usually difficult to control both sides of the trade. One result of this behavior is that marketplace competition is focused on nonprice factors. There are of course secret deals in which price is an important factor. Merchant associations, both formal and informal, are the major groups through which this collusion occurs.

Large merchants in the main cities are organized into associations. Grain wholesalers are a subgroup within the larger merchants' association, as are minor traders and retailers. The wholesalers are a very powerful group within the country, having successfully challenged many government decisions. The Ouagadougou Grain Merchants Association sends a representative to the government commission that sets official cereal prices. When the government wants to purchase a large quantity of grain for OFNACER, it approaches the association, rather than dealing with individual suppliers.

According to Saul's research, in Bobo-Dioulasso one of the major, though unofficial, functions of the grain merchants' associations is to set a maximum price to be paid to farmers by private traders. An executive committee meets just before harvest to decide upon a starting price to offer for new grain. They meet subsequently during the year to adjust the price as the season advances and grain becomes more scarce. Although in other areas these agreements may be less formal; in Bobo-Dioulasso it is a formal agreement, with texts documenting the decisions and fines specified for noncompliance. According to one of the past presidents, the fines are fairly substantial: 10,000 FCFA for a first breach, and 20,000 FCFA for the second. For very large quantities there is an additional fine calculated per kilogram. These fines are one of the association's major revenues. The agreement serves to prevent smaller merchants from increasing their market share in the least costly way possible, by paying higher prices to producers. It is clear from the size of the sanctions that the larger traders feel that they have considerable interests to protect. Compliance by these smaller merchants stems in part from their dependence on the major merchants.[11]

This form of collusion exists at the regional level as well. In Manga, Sherman found that the major merchants would gather in the morning of the market day to determine the price at which they would buy from producers coming to sell in the market. The sanction in this case was to force the merchant to resell the grain at his purchase price. Although the agreement was less formal, and sanctions less severe, the effect was similar: to limit competitive negotiations about prices.

Merchants did comment that in 1984/85, because of the disastrous harvest, the market had become totally anarchic, and these agreements had broken down. Not surprisingly, as competition for grain even among the larger merchants intensifies, this cartel-like arrangement no longer works. It is worth noting that when grain is particularly difficult to find, and therefore expensive, many smaller merchants are unable to compete (mainly due to lack of capital). Then the need to control the

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[11]As Saul notes, the merchants do not see price setting as bad. In fact, the setting of official prices provides a model for them. Furthermore, because the major concern of urban public opinion seems to be low consumer prices, there is even some pride in their actions.

market share of smaller merchants is less important.

Another type of collusive agreement which the research team encountered occurs among traders who are travelling from one region to another in order to purchase grain. Saul sites the example of merchants travelling from Ouagadougou to Guéléoungo. Generally they arrive in Guéléoungo the evening before the market. Based on the information they have gathered about local market conditions and the prevailing prices in Ouagadougou, they discuss and decide upon a maximum price to be paid for the grain arriving in the market. Often the owner of the vehicle has an important influence in the group. One potential sanction is that if other merchants do not comply, they may be unable to load their grain onto the truck for the return trip.

We learned of similar agreements among Ouahigouya traders buying in the Volta Noire region, and also among those traders coming from Pissila and Kaya. In watershed areas, where traders from different regions vie for the same grain, an important element of price competition exists among the different groups. In regions with less important surpluses, or less easy access, one group of traders may have an effective oligopsony.

We did not learn of any specific collusive agreements for selling to consumers. The example cited earlier, of the Ouagadougou merchants banding together to buy the entire stock of a merchant selling at a price lower than the going rate, however, indicates that urban retailers do make a similar attempt to control consumer prices.

3.3.2 By Producers and Consumers

Producers and consumers generally act only as individuals when they buy grain. As such, they have no particular market power. When they can coordinate their activities and act as a unit, they can be an effective force in the market. For example, traders told us of an incident several years ago when Manga producers decided that the price of grain was too low. They decided, as a group, not to sell until the price increased. Those who had planned to sell took their grain back home with them in the evening. By the next market day the price had risen to an acceptable level.

In response to chronic deficits and prohibitively high grain prices in the Sahel and Yatenga regions, village groups have been organizing

into buying groups. Some groups buy from village groups in the southwest, others from traders in Ouagadougou or Bobo-Dioulasso. This involves negotiating the purchase of a large number of sacks and arranging to have them transported. In Mené the village group negotiated a large purchase from OFNACER. In order to obtain transport they agreed to split the shipment with a local trader who was willing to provide a truck.

In 1983/84 various village groups from the Sahel made several trips to Ouagadougou to buy from traders there. For 1984/85 they planned to work directly with some groups from the southwest. Community organizers are helping groups from the Yatenga make contacts with groups in the southwest. Traders see these operations as more of a threat than OFNACER -- perhaps rightfully so, since they build solidarity and expertise.

Although these groups are particularly dynamic in the Yatenga, and are developing elsewhere, they are still of very little importance in the grain trade as a whole in Burkina Faso.

3.4 VERTICAL COORDINATION

For grain to move from producers to consumers, the activities of market participants at different levels of the marketing chain must be coordinated. The process of coordination is influenced by markets, private agreements, vertical ownership, cooperatives, bargaining associations, market orders, information systems, transportation services, credit services, government programs, trade practices, and trade associations. In a subsector like the grain market in Burkina Faso, where activities are linked by markets, market prices are the most important coordinating mechanism because of the incentives they convey. In a complicated and imperfect environment like Burkina Faso's, coordination can be a complex, difficult and risky process.

Each participant is interested in minimizing his risk and maximizing his potential gain from the trading process. Unencumbered spot agreements involve the least amount of orchestrated coordination, pitting each bargainer against the other on the most equal basis. They are also the most risky, because they do not even assure that there will be someone with whom to trade . At the other extreme, the least risky

arrangement is to insure a regular supply by controlling the entire distribution channel, from the producer through the consumer -- totally prearranged, leaving nothing to the mechanisms of the market.

Traders who finance their own chain of intermediaries do so in an attempt to remove some of the risks of the grain trade. Coordination among intermediaries working for the same national or regional trader is the simplest and most automatic. Generally the agreements outlining the terms of the transfer (commissions, salaries, etc.) are negotiated when money is distributed to purchasing agents. Someone is charged with coordinating transport arrangements. As mentioned earlier, however, these agreements are not always upheld. Another trader may negotiate a spot agreement with another trader's village agent to purchase his grain.

Most marketing activities, however, are coordinated by market prices. The prevailing contracts are spot agreements, where the terms of exchange are negotiated at the time of the exchange. We did hear of some traders who negotiated futures contracts in surplus areas, but this is rare because of general mistrust and the changeability of the market. Most traders who are not financing their own chains do not have the funds to "forward contract."

In the Volta Noire, where traders from different regions are competing with each other, it is apparent that the amount of capital available to a group of traders at any one time influences the movement of prices and the direction of flows. Since the traders from Ouahigouya can sell their grain at the highest price vis-à-vis their competitors, they are able to offer the highest price to producers and local intermediaries. Once they have exhausted their capital, the price falls and traders from other regions, like Pissila and Kaya, are able to buy. These traders would often have to wait several days before being able to purchase and accumulate enough to fill their trucks.

Another arrangement of interest, though not very prevalent, is the sharecropping agreements between civil servants in Ouagadougou and Bobo-Dioulasso and the farmers who work their land. The landowner receives a negotiated portion of the output in exchange for use of the land.

Coordination is affected by specific trade agreements and market structure, trading associations, and support and marketing services

(public and private). In a subsector like the grain market in Burkina Faso, where trade and support activities are linked by markets, prices are the most important coordinating mechanism because of the incentives and market signals they convey.

3.5 PRICE FORMATION

The importance of prices in understanding the dynamics of the market is clear from the previous sections. Markets are dynamic. Prices are snapshots of the market for a given product at a particular time and place. They summarize the prevailing supply and demand conditions and the relative market power of different participants. In an exchange system that operates through markets, prices are the signals to which producers, traders, and consumers respond when making their marketing decisions. They are the main way in which the marketing activities of many individual participants are coordinated.

The relationship between market prices and production and marketing costs indicates how efficiently the market allocates resources to their different uses. An analysis of prices, coupled with an analysis of the behavior of market participants, can illuminate areas in which the market is not functioning as well as it could and reveal out ways in which the marketing system does work efficiently.

The factors affecting grain prices are similar throughout the country. Traders everywhere cite transport costs and prices in neighboring markets as most important in determining local prices.

Before and during the harvest the major traders who buy in surplus regions travel throughout these areas to judge the new harvest. Based on this information they decide on prices to offer producers in particular markets. As mentioned earlier in this chapter, the members of urban market associations discuss market conditions and determine what prices consumers will pay and how much they will offer producers. These traders then send their teams into the rural areas to buy.

Information about prices in neighboring areas is communicated quickly and often. A trader in one rural area sets his prices as a function of the prices in surrounding markets and transport costs between them. Traders everywhere are aware of the threat of arbitrage, potential

competition from neighboring markets, and adjust their prices accordingly.

Producer prices are generally higher on a market day because of the influx of traders. Once they have risen to a certain level, it may be difficult for local traders to pay lower prices after the competition leaves. This was part of the motivation which caused traders in the Manga region to negotiate a monopsony on retail trade. Manga traders buy directly from the local farmers, and the assemblers from Ouagadougou and elsewhere buy from them. Thus, local traders decide the retail price -- based of course, on the wholesale price, transportation and marketing costs.

Consumer prices for grain are based on the purchase price and retailing costs. Therefore, the price of grain in a particular market (or region) depends heavily on the producer price in the supplying region(s).

Similarly, the price at which wholesalers buy in supply regions depends on the prices at which they can sell as well as the transportation and marketing costs involved. The wholesale price in consumption and transit markets depends on the supply costs.

At all levels of trade the intermediaries calculate some profit into the price, how much depends on market share and the threat of competition. Obviously, the only trader in an area can charge more profit per unit (monopoly/monopsony rents) than one with close competitors.

As a result of the rhythm of the agricultural cycle, different factors affect price changes during the year. In regions which supply grain throughout the year, prices are most closely influenced by the prices in the receiving regions. Similarly, in a deficit region, where consumption demand dominates market activity, prices are most influenced by producer prices in its supply region.

Many regions which are supply areas just after the harvest become demand areas during the latter part of the year. (See the backflows on the map of grain flows, Map 2.3.) When grain is flowing out of the region, producer prices are influenced by prices in the receiving areas, by transport costs, and by producer prices in the surrounding areas. Later in the year, when consumer demand dominates the market, prices are

heavily influenced by the producer price in the supplying region or in the transit market from which the grain is purchased.

In areas where OFNACER buys or sells, market prices are also influenced by the official prices during the time that OFNACER is a force in the market. OFNACER's presence almost always has a downward influence on consumer prices. The effect of official producer prices is mixed. Where village groups and OFNACER agents buy for OFNACER the existence of official producer prices tends to cause producer prices to rise. Where traders buy for OFNACER, however, the effect may be the opposite -- to sanction low producer prices. Because traders receive the same official price per unit as producers, in order to make a profit they must pay producers less than the official price.

There is a great deal of circularity in the factors which influence prices. The more efficiently price signals are transmitted and the fewer impediments there are to responding to them, the more circular the influences. This of course is the reason for promoting truly "free" trade.

3.6 MARKET PERFORMANCE

In Chapter 1 we outlined the elements necessary for a marketing system to be performing well. Briefly they are:

1. lowest cost distribution of products;
2. a flow of commodities from producers willing to sell to consumers wanting to buy, with a marketing margin consistent with minimum cost for handling and distribution;
3. producer prices which convey consumers' willingness to pay, and consumer prices which reflect true costs of production;
4. the system helps meet social and economic goals of the country.

It is difficult to assess the degree to which these elements are present in the marketing system in Burkina Faso. In this section we consider three major indicators of market performance: market integration, marketing margins, and seasonal price fluctuations.

3.6.1 Market Integration

The free flow of goods between markets and regions in response to changing conditions of supply and demand is essential for the efficient functioning of a marketing system. When such a free flow exists, markets are considered perfectly integrated. Markets A and B are integrated when an increase in the price in market A, so that the difference between prices (for the same goods) in the two markets is greater than transfer costs, causes goods to flow into market A, which in turn bids the price down in A and up in B, so that the difference in prices becomes less than or equal to the transfer costs. In discussing market integration over space, the question of interest is: to what degree are markets in Burkina Faso integrated? Do traders and other market participants respond to price signals?

> Price analysis is an indirect approach for determining market efficiency. Efficient marketing systems are characterized by a high degree of price integration -- closely correlated movements of connected series of prices -- over space, form, and time. In an efficient market economy, price integration is caused by arbitrage. In these economies market participants respond when they notice that prices in two markets are sufficiently different that profits can be made by buying in the low-price market and selling in the high-price market. If competitive conditions prevail and enough merchants respond in this way, the abnormal price difference disappears because supplies in the low-price market decline, placing upward pressure on prices, and supplies in the high-price market increase, causing prices to fall. Hence, prices in all efficient markets are linked by the arbitraging decisions of merchants, and price differences should reflect only normal costs. However, expectations about future price levels are an important ingredient in price formation. Because future price levels are uncertain, merchants bear risks when holding commodities, and the costs of risk-bearing are also included in marketing margins. [The] analysis of marketing margins involves statistical comparisons of pairs of price series that should be connected by the marketing system, and it applies to interrelated markets (over space), degrees of product processing (in form), and periods of storage (over time). In using price data to determine the degree of correlation in price movements, it is essential to be clear about the level in the marketing chain to which the prices apply.
>
> (Timmer et. al., 1983, p. 170)

In order to analyze market integration as rigorously as possible, one needs a complete series of monthly or weekly prices for a consistent unit

of measure from markets throughout the country for as many years as possible. Unfortunately such a body of statistics does not exist in Burkina Faso. This makes it extremely difficult to address the above questions. We were able to obtain monthly (or weekly) prices for white sorghum, millet and corn for different measuring units (sack, tine and kilogram), depending on the market. However, these price series present several problems.[12] First, they come from different sources, each of which has a different way of collecting them. Second, they represent at most two years, 1982/83 and 1983/84. Third, for many markets the monthly series are incomplete. Finally, prices often are recorded for a volume unit which varies over time and space; so the prices do not necessarily represent the price of the same weight. Nonetheless, these are the only data we have and some analyses, carefully qualified, can be conducted.

So as not to misuse the data, we must concentrate on market integration over space, with only a brief discussion of seasonal price fluctuations. Two questions are of particular interest:

1. How well integrated are markets within particular regions?
2. How well integrated are markets which trade with each other?

If prices are highly correlated we can draw one of three conclusions: i) either the impediments to trade are small enough that farmers and merchants can respond to price signals;[13] or ii) prices are very stable and change very little; or iii) there is monopoly or effective government price control without necessarily any actual marketing connection among the towns.

We calculated correlation coefficients for the prices of the four major grains, for three volumes (the sack, tine and kilogram) for October 1983 through September 1984. We have preserved the distinction between prices for the different units of measure, rather than collapsing the

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[12]See Appendix G on prices for a detailed discussion of who collects them, how they are collected and what the problems of comparability are.

[13]If this is the case, we cannot conclude that any individual market is competitive, but rather that there is effective competition between (among) the markets in that area.

price series.[14] The results are in Tables H.1- H.11 (in Appendix H). Selected correlation coefficients are reproduced in this section.

In general, we observe that the prices for white sorghum are the most highly correlated, and those for corn the least. White sorghum has the highest volume of trade, followed by millet, red sorghum, and finally corn. There are, of course, important regional variations. The tendency is for price correlations to mirror those differences.

Marketing margins are another indication of integration across space, how well price signals are transmitted, and the relative monopoly power of traders at different stages of the marketing chain. In the regional studies margins are presented for numerous markets within each region. In this section we will discuss marketing margins for some of the major trade routes.

3.6.1.1 Integration Within Regions

Trade within regions occurs mostly at the retail level. Very little wholesaling or bulking takes place from one market to another within a region. Therefore, the correlation coefficients for prices within the region indicate the degree to which forces in one market are conveyed to another, even though we know that trade between them does not occur (however, the potential for trade always exists). Tables 3.3 and 3.4 show price correlations for selected groups of markets for 100 kilogram sacks of millet and white sorghum respectively. In general the correlations among markets within circumscribed regions are high. The standard deviations for sack and tine prices are high enough to eliminate drawing the conclusion that the correlations are high due to stable prices. Knowledge of the marketing system suggests that government price control is not the reason either. Thus we can conclude that either price signals are transmitted and responded to or there is effective monopoly. From our rapid reconnaissance surveys, we know that although some degree of collusion exists within many markets, in most regions there is no effective monopoly between the markets included in our analysis.

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[14]Because of the importance of volume discounts, it would be incorrect to calculate the price of a tine or plate into a comparable price for a sack.

TABLE 3.3

INTRA-REGIONAL CORRELATION COEFFICIENTS FOR DETRENDED MILLET PRICES FOR A 100 KILOGRAM SACK

	Dédougou	Tougan	Nouna	Djibasso	Kouka	Solenzo	Tchériba	Safané	Tankodogo	Garango
Dédougou										
Tougan	.92 (.00) N=10									
Nouna	.95 (.00) N=10	.89 (.00) N=10								
Djibasso	.93 (.00) N=8	.80 (.02) N=8	.78 (.02) N=8							
Kouka	-.56 (.44) N=4	.36 (.64) N=4	-.22 (.78) N=4	N=3						
Solenzo	.97 (.00) N=9	.85 (.00) N=9	.93 (.00) N=9	.88 (.00) N=8	N=3					
Tchériba	.90 (.00) N=10	.90 (.00) N=10	.88 (.00) N=10	.98 (.00) N=8	-.67 (.33) N=4	.91 (.00) N=9				
Safané	.90 (.00) N=10	.90 (.00) N=10	.88 (.00) N=10	.98 (.00) N=8	-.67 (.33) N=4	.91 (.00) N=9	1.0 (.00) N=10			
Gaoua	.44 (.56) N=4	.38 (.62) N=4	.39 (.61) N=4	N=3	N=2	N=3	.12 (.88) N=4	.12 (.88) N=4		
Garango									.97 (.03) N=4	
Ouaga Mean									.63 (.25) N=5	.83 (.17) N=4

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TABLE 3.4

INTRA-REGIONAL CORRELATION COEFFICIENTS FOR
DETRENDED WHITE SORGHUM PRICES FOR 100 KILOGRAM SACK

1 of 2

	Dédougou	Tougan	Nouna	Djibasso	Solenzo	Tchériba	Safané	Dano	Diébougou	Batié	Dissin
Dédougou											
Tougan	.89 (.00) N=9										
Nouna	.83 (.01) N=9	.74 (.02) N=9									
Djibasso	.93 (.00) N=9	.75 (.02) N=9	.85 (.00) N=9								
Solenzo	.93 (.00) N=10	.72 (.03) N=9	92 (.00) N=9	.94 (.00) N=9							
Tchériba	.85 (.00) N=9	.56 (.12) N=9	.68 (.04) N=9	.93 (.00) N=9	.85 (.00) N=9						
Safané	.94 (.00) N=9	.72 (.03) N=9	75 (.02) N=9	.98 (.00) N=9	.92 (.00) N=9	.98 (.00) N=10					
Dano							.97 (.00) N=6				
Diébougou							.48 (.34) N=6	.39 (.44) N=6			
Batié							.86 (.01) N=7	.37 (.47) N=6	.36 (.48) N=6		
Dissin							.86 (.03) N=6	.58 (.30) N=5	.56 (.33) N=5	.92 (.01) N=6	

TABLE 3.4 (con't.)

	N'Dorola	Aribinda	Dori	Sebba	Djibo	Koudougou	Koupéla	Tenkodogo	Zorgo	Garango
N'Dorola										
Aribinda	.58 (.23) N=6									
Dori	-.10 (.85) N=6	.58 (.22) N=6								
Sebba	.33 (.52) N=6	.88 (.01) N=7	.69 (.13) N=6							
Djibo	-.38 (.62) N=4	-.39 (.52) N=5	1.0 (.00) N=4	.06 (.92) N=5						
Koudougou										
Koupéla										
Tenkodogo							.34 (.45) N=7			
Zorgo							N=3	N=3		
Garango							-.14 (.79) N=6	.81 (.05) N=6	N=3	
Zabré							-.15 (.80) N=5	.74 (.16) N=5	N=3	.79 (.11) N=5

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986

(Regional details are presented in Volume II.) Thus, we can conclude that within regions price signals are transmitted and elicit a response.

Within the Volta Noire region, prices are highly correlated for both millet and sorghum. This is undoubtedly due to the high degree of competition in purchasing grain. Millet prices in Kouka are the only aberration, explainable in part by the low number of observations. The results are similar for prices in the Centre-Est, with Koupéla as the aberration, explainable in part by the thinness of Koupéla's market in white sorghum and millet -- red sorghum is the main commodity traded there.

The Bougouriba region also shows mixed results. Some markets are well correlated, others probably not, due to the thin market for millet and white sorghum. In this area corn is the major commodity. A look at those correlations (Tables H.6 and H.8) shows a high degree of integration.

Prices are less well correlated within the Sahel region (white sorghum) due in part to the larger distances (higher transport costs) and to the preference for millet over sorghum.

For other regions we simply do not have enough prices to draw conclusions. Another interesting, though not surprising, pattern emerges. Within deficit regions, the correlations, even when high, are not as high as within surplus regions. This can be explained by the fact that there is less trade within those regions in general. Also, we know that there are fewer traders in those areas and the grain markets do not seem to function as well.

In heavily surplus regions like the Volta Noire and Bougouriba, where there are many traders in the region and a very active trade, the correlations between markets are very high. We can conclude that the markets work well within those regions.

It is also important to note that the correlation of prices between markets within a slightly larger area is often not very good. This is not surprising, since we know that in general there is little trade between the markets which have low correlations.

3.6.1.2 Integration Between Regions/Long Distance Trade

To address the integration of markets separated by greater distances,

we consider the correlations between markets on selected trade routes. Tables 3.5 and 3.6 show the inter-regional correlation coefficients for millet and sorghum respectively. It is difficult to generalize across the different crops. Not surprisingly, the inter-regional correlations are definitely lower as a group than the intra-regional correlations. Correlations are higher along particular routes for the crops which are traded in greater volumes.

For millet, transported mostly to the northern zones, the correlations are fairly high between the markets in the northern Volta Noire and the Kaya region (Korsimoro). Unfortunately, we do not have millet prices for the Sahel or the Yatenga regions. The correlations between prices in Ouagadougou and the Volta Noire are lower and are still lower between the Volta Noire and Bobo-Dioulasso, where millet is less preferred than sorghum and corn.

For white sorghum, the correlations are relatively high between the Kaya region and the Volta Noire, between the Volta Noire and Bobo-Dioulasso, Ouagadougou and Koudougou, and some Sahel markets.

For both millet and sorghum price correlations are lower than we might have expected between Ouagadougou and Bobo-Dioulasso. This is probably because Ouagadougou is supplied more directly from rural markets, so that their trading connection is more indirect except in the height of the soudure.

There are certain routes where the correlations are particularly low, for example, Dédougou - Ouagadougou, Nouna - Ouagadougou, Koupéla - Ouagadougou, Dori - Ouagadougou. Although the significance of the correlations is also questionable, they are still difficult to explain. Since we know that these regions trade with each other, some explanation may lie in the size of the transport costs.

Given the earlier mentioned critique of using correlation coefficients as proof of market integration, we are hesitant to draw many conclusions from these numbers. The most that can be said is that the correlation coefficients indicate that markets within fairly circumscribed regions seem to be fairly well integrated. The extent of inter-regional integration seems to depend very much on the particular trade route. The Volta Noire seems well integrated with the regions it

TABLE 3.5

INTER-REGIONAL CORRELATION COEFFICIENTS FOR
DETRENDED MILLET PRICES FOR A 100 KILOGRAM SACK

	Korsimoro	N'Dorola	Tenkodogo	Garango	Dédougou	Tougan	Nouna	Djibasso	Gaoua
Korsimoro					.98 (.00) N=6	.96 (.00) N=6	.96 (.00) N=6	.79 (.11) N=5	
Ouaga Mean	.71 (.12) N=6		.63 (.25) N=5	.83 (.17) N=4	.44 (.24) N=9	.57 (.11) N=9	.43 (.25) N=9		.83 (.17) N=4
Bobo Mean		.89 (.01) N=7			.36 (.30) N=10	.22 (.55) N=10	.29 (.42) N=10	-.07 (.86) N=8	.44 (.56) N=4

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 3.6

INTER-REGIONAL CORRELATION COEFFICIENTS FOR
DETRENDED WHITE SORGHUM PRICES FOR 100 KILOGRAM SACK

	Dédougou	Tougan	Nouna	Djibasso	Solenzo	Tchériba	Safané	Dano	Diébougou	Tougouri	Korsimoro
Tougouri	.51 (.31) N=6	.27 (.66) N=5	-.06 (.92) N=5	.59 (.30) N=5	.35 (.49) N=6	.71 (.18) N=5	.73 (.16) N=5				
Korsimoro	.76 (.08) N=6	.74 (.09) N=6	.64 (.17) N=6	.59 (.22) N=6	.79 (.06) N=6	.37 (.47) N=6	.69 (.13) N=6				
Ouaga Mean 100	.17 (.65) N=9	.51 (.20) N=8	.26 (.26) N=8							.54 (.35) N=5	.45 (.37) N=6
Bobo Mean 200	.57 (.09) N=10	.81 (.01) N=9	.60 (.86) N=9	.53 (.14) N=9	.48 (.17) N=10	.67 (.03) N=10	.74 (.01) N=10	.79 (.06) N=6	.75 (.09) N=6		

	N'Dorola	Aribinda	Dori	Sebba	Djibo	Koudougou	Koupéla	Tenkodogo	Ouaga Mean	Bobo Mean
Ouaga Mean		.83 (.02) N=7	.08 (.88) N=6	.67 (.14) N=6	-.76 (.24) N=4	.75 (.25) N=4	.04 (.94) N=6	.61 (.20) N=6		
Bobo Mean	.46 (.30) N=7	.88 (.00) N=8	.34 (.50) N=6	.77 (.04) N=7	-.48 (.41) N=5	.50 (.50) N=4	.34 (.45) N=7	.75 (.05) N=7	.55 (.07) N=12	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

supplies. The more outlying and deficit regions are defintely less well integrated with specific supply markets.

3.6.2 Marketing Margins

Another symptom of inefficiency in the marketing system is excess profits. Marketing profits can be measured by evaluating the actual costs of marketing and comparing them to revenues. The difference, the profit or marketing margin, must be evaluated in relation to the trader's investment. Evaluating marketing margins -- the spread between farm prices and consumer prices -- is an indirect way of examining profits. Large marketing margins do not necessarily mean excess profits due to monopolistic elements in the marketing system. However, they can also occur due to high real marketing costs.

The question most often asked about marketing margins is: are they too high? Actually, the important question for evaluating marketing margins is: how high are they relative to costs? The absolute margin tells very little without knowledge of what kind of investment was made to obtain it.

Estimating margins, even with excellent data on costs and prices is a "best guess" situation. There is a lot of variability that can occur. The margin on sacks purchased in a market is different from the margin on grain collected by a village resident buyer. The trader's employee costs must be spread over all the sacks they collect. His/her own time and expertise is a cost that may be spread over the sacks collected from several different trade routes. In spite of these difficulties we have estimated ranges for net margins and return on capital. The data and calculations are presented in Table 3.7.

Each of the routes presented is representative of parallel routes within the same general region. The margins calculated for Nouna to Ouahigouya are similar to those from other markets in the Volta Noire to Ouahigouya. Similarly, Nouna to Bobo-Dioulasso is representative of margins from the southern Volta Noire to Bobo-Dioulasso, and Djibasso to Ouagadougou is representative of routes from the Volta Noire to Ouagadougou. Although the Ouagdougou to Dori route is somewhat unique, the margins are probably representative of those on similar routes.

TABLE 3.7

ROUGH ESTIMATES OF NET MARGINS PER SACK OF WHITE SORGHUM FOR SELECTED TRADE ROUTES[a]

NOUNA TO OUAHIGOUYA

Dates	Purchase Price	Commission	Personnel Costs	Sundry Costs[b]	Bag and Handling[c]	Transport	Capital Costs	Total Investment	Sale Price	Estimated Net Margin	Estimated Return on Capital
Jan - Feb	5700	0 - 250	580	100 - 300	400	1250	80 - 339	8110 - 8819	10500	1681 to 2390	21 to 27%
Feb - Mar	n.a.	0 - 250	580	100 - 300	400	1250	n.a.	n.a.		n.a.	n.a.
Mar - Apr	7500	0 - 250	580	100 - 300	400	1250	98 - 411	9928 - 10691	11750	809 to 1572	8 to 15%
Apr - May	9300	0 - 250	580	100 - 300	400	1250	116 - 483	11746 - 12563	11500	-1063 to -246	-9 to -2%
May - Jun	9300	0 - 250	1000	100 - 300	400	1250	121 - 500	12171 - 13000	11500	-1500 to -671	-12 to -5%
Jun - Jul	9300	0 - 250	1000	100 - 300	400	1250	121 - 500	12171 - 13000	11500	-1000 to -171	-8 to -1%
Jul - Aug	9300	0 - 250	1000	100 - 300	400	1250	121 - 500	12171 - 13000	12000	-500 to 330	-4 to 3%
Aug - Sep	11000	0 - 250	1000	100 - 300	400	1250	138 - 568	13888 - 14768	12500	-2268 to -1388	-16 to -9%
Sep - Oct	11000	0 - 250	1000	100 - 300	400	1250	138 - 568	13888 - 14768	13000	-1768 to -888	-13 to -6%
Oct - Nov	8500	0 - 250	580	100 - 300	400	1250	108 - 451	10938 - 11731	n.a.	n.a.	n.a.
Nov - Dec	6000	0 - 250	580	100 - 300	400	1250	83 - 351	8413 - 9131	n.a.	n.a.	n.a.

DJIBASSO TO OUAGADOUGOU

Dates	Purchase Price	Commission	Personnel Costs	Sundry Costs[b]	Bag and Handling[c]	Transport	Capital Costs	Total Investment	Sale Price	Estimated Net Margin	Estimated Return on Capital
Jan - Feb	6000	0 - 250	400	100 - 300	400	1250	82 - 344	8232 - 8944	10000	1056 to 1769	13 to 20%
Feb - Mar	n.a.	0 - 250	400	100 - 300	400	1250	n.a.	n.a.	11666	n.a.	n.a.
Mar - Apr	9200	0 - 250	400	100 - 300	400	1250	114 - 472	11464 - 12272	12333	61 to 870	1 to 7%
Apr - May	10000	0 - 250	400	100 - 300	400	1250	122 - 504	12272 - 13104	12200	-904 to -72	-7 to -1%
May - Jun	10000	0 - 250	850	100 - 300	400	1250	126 - 522	12726 - 13572	11250	-2322 to -1476	-18 to -11%
Jun - Jul	10000	0 - 250	850	100 - 300	400	1500	129 - 532	12979 - 13832	12400	-1432 to -579	-11 to -4%
Jul - Aug	11000	0 - 250	850	100 - 300	400	1500	139 - 572	13989 - 14872	13500	-1372 to -489	-10 to -3%
Aug - Sep	11500	0 - 250	850	100 - 300	400	1500	144 - 592	14494 - 15392	13812	-1580 to -682	-11 to -4%
Sep - Oct	11500	0 - 250	850	100 - 300	400	1500	144 - 592	14494 - 15392	13650	-1742 to -844	-12 to -5%
Oct - Nov	8700	0 - 250	400	100 - 300	400	1250	109 - 452	10959 - 11752	12000	248 to 1042	2 to 9%
Nov - Dec	n.a.	0 - 250	400	100 - 300	400	1250	n.a.	n.a.	n.a.	n.a.	n.a.

TABLE 3.7 (con't.)

NOUNA TO BOBO-DIOULASSO

Dates	Purchase Price	Commission	Personnel Costs	Sundry Costs[b]	Bag and Handling[c]	Transport	Capital Costs	Total Investment	Sale Price	Estimated Net Margin	Estimated Return on Capital
Jan - Feb	5700	0 - 250	500	100 - 300	400	1000	77 - 326	7777 - 8476	9966	1490 to 2189	19 to 26%
Feb - Mar	n.a.	0 - 250	500	100 - 300	400	1000	n.a.	n.a.	10800	n.a.	n.a.
Mar - Apr	7500	0 - 250	500	100 - 300	400	1000	95 - 398	9595 - 10348	10800	452 to 1205	5 to 12%
Apr - May	9300	0 - 250	500	100 - 300	400	1000	113 - 470	11413 - 12220	10800	-1420 to -613	-12 to -5%
May - Jun	9300	0 - 250	750	100 - 300	400	1000	116 - 480	11666 - 12480	11000	-1480 to -666	-13 to -5%
Jun - Jul	9300	0 - 250	750	100 - 300	400	1000	116 - 480	11666 - 12480	11000	-1480 to -666	-13 to -5%
Jul - Aug	9300	0 - 250	750	100 - 300	400	1000	116 - 480	11666 - 12480	12680	200 to 1015	2 to 8%
Aug - Sep	11000	0 - 250	750	100 - 300	400	1000	133 - 548	13383 - 14248	13250	-998 to -133	-7 to -1%
Sep - Oct	11000	0 - 250	750	100 - 300	400	1000	133 - 548	13383 - 14248	11700	-2548 to -1683	-19 to -12%
Oct - Nov	8500	0 - 250	500	100 - 300	400	1000	105 - 438	10605 - 11388	8750	-2638 to -1855	-25 to -16%
Nov - Dec	6000	0 - 250	500	100 - 300	400	1000	80 - 333	8080 - 8788	9000	212 to 920	3 to 10%

OUAGADOUGOU TO DORI

Dates	Purchase Price	Commission	Personnel Costs	Sundry Costs[b]	Bag and Handling[c]	Transport	Capital Costs	Total Investment	Sale Price	Estimated Net Margin	Estimated Return on Capital
Jan - Feb	n.a.	none	900	200 - 400	400	1000	n.a.	n.a.	11000	n.a.	n.a.
Feb - Mar	10000	none	900	200 - 400	400	1000	125 - 508	12625 - 13208	11000	-2208 to -1625	-17 to -12%
Mar - Apr	11666	none	900	200 - 400	400	1000	142 - 575	14308 - 14941	11000	-3941 to -3308	-28 to -22%
Apr - May	12333	none	900	200 - 400	400	1000	148 - 601	14981 - 15634	15000	-634 to 19	-4 to 0%
May - Jun	12200	none	530	200 - 400	400	1000	143 - 581	14473 - 15111	n.a.	n.a.	n.a.
Jun - Jul	11250	none	530	200 - 400	400	1500	139 - 563	14019 - 14643	n.a.	n.a.	n.a.
Jul - Aug	12400	none	530	200 - 400	400	1500	150 - 609	15180 - 15839	16000	161 to 820	1 to 5%
Aug - Sep	13500	none	530	200 - 400	400	1500	161 - 653	16291 - 16983	16000	-983 to -291	-6 to -2%
Sep - Oct	13812	none	530	200 - 400	400	1000	159 - 646	16101 - 16788	n.a.	n.a.	n.a.
Oct - Nov	13650	none	530	200 - 400	400	1000	158 - 639	15938 - 16619	n.a.	n.a.	n.a.
Nov - Dec	12000	none	900	200 - 400	400	1000	145 - 588	14645 - 15288	n.a.	n.a.	n.a.

NOTES: [a]Our estimates are made for the operations of a large trader. Costs may be very different for medium sized traders along the same routes.

[b]Sundry costs include taxes, license fees, bribes, warehousing etc.

[c]The cost of a used jute sack is about 200 FCFA. Loading and unloading a bag from the truck is 100 FCFA each.

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We decided to estimate margins for grain which is purchased in the supplying area at the beginning of one month and sold at the beginning of the following month. One month is probably about the average time it takes to buy and resell -- turnover may be faster or slower on certain routes and at different times of the year. The rate at which the trader can turn over his/her capital is crucial in evaluating the return on capital of a particular commercial venture. This is discussed further when we evaluate the monthly margins.

The purchase and sale prices for the calculations come from the various price series collected during the study (Appendix G). Because of seasonal differences in margins, we selected grains and markets for which we had as complete a series as possible, and in which we had some confidence in the prices. We were severely limited by the available data.[15]

3.6.2.1 Marketing Costs

Direct marketing costs include the purchase price of the grain, the cost of the sack, loading and unloading the grain onto the truck, transportation (see Table 3.9), and commissions to village buyers and coordinators.

More indirect costs include personnel, sundry items, and the cost of capital which cannot be easily attributed to a particular shipment. These indirect costs, which are essential for the marketing operation, are particularly difficult to evaluate. Rather than choosing one particular figure, we consider a range, which may vary according to the season and the specific way in which a sack is purchased. The calculations are presented in Table 3.8.

Personnel costs include two apprentices per truck, a warehouseman, and the trader. Salaries for the apprentices and warehouseman are calculated based on low-level civil service salaries. A reasonable salary to compensate the trader for his/her expertise and managerial capability is considered to be equivalent to a high-level civil service position. Because the volume of trade is greater between October and

[15]We would like to have calculated margins for other routes but were hesitant about the quality of the price data.

TABLE 3.8

ESTIMATED PERSONNEL COSTS FOR SELECTED TRADE ROUTES

NOUNA to OUAHIGOUYA		
	Oct. - Apr.	May - Sept.
Apprentices: 2 @ 20,000 FCFA each		
trips/month	5	2
bags/ trip	100	80
Cost per bag: 40,000/total bags	80 FCFA	250 FCFA
Trader's + Warehouseman		
salary: 300,000 FCFA		
monthly purchase volume (bags)		
from Volta Noire	500	160
from Yatenga and elsewhere	100	240
Cost:		
300,000/monthly volume	500 FCFA	750 FCFA
TOTAL COST PER BAG	580 FCFA	1000 FCFA

DJIBASSO TO OUAGADOUGOU		
	Oct. - Apr.	May - Sept.
Apprentices: 2 @ 20,000 FCFA each		
trips/month	4	2
bags/ trip	100	80
Cost per bag: 40,000/total bags	100 FCFA	250 FCFA
Trader's + Warehouseman		
salary: 300,000 FCFA		
monthly purchase volume (bags)		
from Volta Noire	400	160
from elsewhere	600	340
Cost:		
300,000/monthly volume	300 FCFA	600 FCFA
TOTAL COST PER BAG	400 FCFA	850 FCFA

TABLE 3.8 (con't.)

OUAGADOUGOU TO DORI		
	Nov. - Apr.	May - Oct.
Apprentices: 2 @ 20,000 FCFA each		
trips/month	1	2
bags/ trip	100	100
Cost per bag: 40,000/total bags	400 FCFA	200 FCFA
Trader's + Warehouseman		
salary: 200,000 FCFA		
grain trade is only half-time		
monthly purchase volume (bags)		
from Ouagadougou	100	200
from elsewhere	100	100
Cost:		
100,000/monthly volume	500 FCFA	330 FCFA
TOTAL COST PER BAG	900 FCFA	530 FCFA
NOUNA to BOBO-DIOULASSO		
	Oct. - Apr.	May - Sept.
Apprentices: 2 @ 20,000 FCFA each		
trips/month	4	2
bags/ trip	100	80
Cost per bag: 40,000/total bags	100 FCFA	250 FCFA
Trader's + Warehouseman		
salary: 300,000 FCFA		
monthly purchase volume (bags)		
from Volta Noire	400	160
from elsewhere	600	240
Cost: 300,000/monthly volume	300 FCFA	500 FCFA
TOTAL COST PER BAG	400 FCFA	750 FCFA

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 3.9

TRANSPORT COSTS
(arrow indicates direction of trade)

Market A	Market B	Cost per 100 kg sack	
		Dry Season	Wet Season
Ouagadougou ←	Baré	600	600
	Bobo-Dioulasso	500	500
	Dano	1000	1200
	Dédougou	1000	1200
	Djibasso	1250	1500
	Garango	750	750
	Gassan	1250	1500
	Guéléoungo	750	800
	Koudougou	500	500
	Koupéla	350	350
	Kouka	1000	1000
	Kumana	1000	1000
	Léo	750	1000
	Moktédo	400	400
	Nouna	1000	1000
	Pô	500	500
	Pouytenga	350	350
	Solénzo	1250	1250
	Tenkodogo	350	350
	Tiébelé	750	750
	Tougan	1250	1500
	Zabré	800	900
	Zorgho	300	300
→	Aribinda	1250	2000
	Boulsa	800	1200
	Boussouma	300	300
	Barsalogho	750	900
	Djibo	600	750
	Dori	1000	1500
	Gorom-Gorom	2000	3000
	Kaya	350	600
	Kongoussi	400	400
	Maane	500	750
	Markoye	2000	3000
	Ouahigouya	500	500
	Pissila	500	750
	Sébba	2000	3500
	Tougouri	1000	1800
↔	Boussé	500	
	Dassouri	250	250
	Kokologo	350	350
	Kombissiri	350	400
	Korsimoro	400	400
	Fada N'Gourma	500	500
	Saponé	250	400
	Ziniaré	350	400
	Zitenga	500	500
Bobo-Dioulasso ←	Baré	500	500
	Dano	750	800
	Dédougou	1000	1000
	Djibasso	700	700
	Gassan	1200	1300
	Kouka	800	800
	Kumana	800	1000
	N'Dorola	500	700
	Nouna	1000	1000
	Safané	700	700
	Solénzo	800	800
	Soumousso	500	600
	Tchériba	800	800
	Tougan	1250	1400
↔	Diébougou	1000	1000
	Gaoua	1250	1250-1500

TABLE 3.9 (con't.)

Market A	Market B	Cost per 100 kg sack	
		Dry Season	Wet Season
Diébougou ⟷	Gaoua	600	700
	Ouagadougou	1000	1200
Gaoua ⟷	Batié	500	600
	Dano	750	850
	Dissin	600	700
	Ouagadougou	1000	1200
Ouahigouya ←	Bobo-Dioulasso	1250	1250-1300
	Dédougou	1000	1000
	Djibasso	1000	1000
	Kouka	1250	1250
	Kumana	1000	1000
	Nouna	1000	1250
	Ouagadougou	500	500
	Solénzo	1250	1250
	Tougan	700	800
→	Aribinda	1000	1000
	Djibo	500	500
Koudougou ←	Nouna	800	800
	Djibasso	1000	1000
	Tougan	1000	1000
	Safané	750	750
	Tchériba	750	750
	Kouka	1000	1000
	Koumana	800	1000
	Bobo-Dioulasso	400	400
⟷	Léo	1500	1750
	Kokologo	500	500
Dori →	Gorom-Gorom	1500	2000
	Markoy	1500	2000
	Sébba	1500	2000
Djibo ←	Solénzo	1250	1500
Dédougou ←	Djibasso	600	700
	Kouka	800	800
	Nouna	400	600
	Safané	500	500
	Solénzo	700	800
	Tchériba	400	500
	Tougan	700	700
Nouna ←	Djibasso	500	500
	Solénzo	300	400
Kaya ←	Bobo-Dioulasso	1000	1000
	Dédougou	1500	1750
	Koudougou	1000	1000
	Kouka	1500	1750
	Solénzo	1500	1750
Pissila →	Bogandé	1500	1500
	Dori	700	1000

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

April the imputed cost of these services per bag is lower than in May through September, though the total cost may be the same. The cost of capital is the return the trader could have made on his money had he invested it in some other activity during the same time. At a minimum, this is the commercial rate of interest, about 12% per year. We estimate a reasonable range for capital cost to be 1 to 4% per month.

The final cost which we do not include in our calculations, but which must be considered in the evaluation of the return on capital, is risk. This will be discussed at length below.

3.6.2.2 Evaluating Return on Capital

In evaluating the trader's return on capital, we must remember that for most wholesalers trading is a year-round activity. High returns in one period compensate for low returns in other periods. Similarly, and of primary importance, gains in one period may offset losses in another. We emphasize this point, because both the quantitative and qualitative data suggest that margins are very low or negative for certain trade routes at particular times of the year. Traders may have to incur losses as part of the normal course of doing business in order to keep clients, suppliers, etc. However, in general when the margins along a particular route become negative, trade along that route stops.

The return on capital shown in Table 3.7 varies widely, both seasonally and across the different routes. When the Volta Noire is the supplying region, the estimated return on capital is high in the post harvest season, and becomes negative in the later dry season and the soudure. For grain bought in Ouagadougou and sold in Dori it is just the opposite. In considering all the monthly margins along a particular route, we can certainly see that high profits in some months are offset by losses in others.

How do our estimated margins differ from the traders' actual margins? Aside from errors in estimating costs, the major difference between the margins in Table 3.7 and actual profits probably lies in the difference between the weight of the sack which is purchased and the weight of the sack which is sold. If, for example, the sacks of grain bought in Nouna for 7500 FCFA weigh 110 kg, but the sacks which are sold in Ouahigouya weigh 90-100 kg, then traders make an additional margin

from this redistribution. Most traders do this kind of redistribution (reconditioning of the bags). One can easily see that our estimated net margins are probably too low. In the same vein, during the later dry season and soudure grain which moves through big wholesale markets like Ouagadougou, Bobo-Dioulasso, and Ouahigouya is not sold as quickly thus further increasing the gross margin.

Although Table 3.7 shows negative margins for many months along all the selected routes, we know that grain does travel along those routes at those particular times. In fact, the actual margins which traders experience are probably higher than we have estimated, especially when our calculations are negative, because of the effect of redistribution and the timing of transactions discussed above.

The preceding discussion should be convincing as to how difficult it is to make accurate estimates of marketing margins. In the end, what can we say about the trader's return on capital?

The numbers indicate that for moving grain out of the Volta Noire (supply regions) the return on capital is highest in the post harvest season and diminishes fairly continuously until the next harvest. For grain moving from Ouagadougou into the Sahel, not surprisingly, the seasonal pattern is just the opposite -- the return on capital is low at the harvest and increases continuously through the soudure.

Does the return on capital indicate that traders are earning excess profits? It is difficult to say. Even if we assume that half the trader's capital is tied up in inventory at any one time, there seems to be an excellent return on capital at certain times of the year.

There is one additional cost which must be considered when evaluating traders' return on capital: risk. Although we cannot put a monetary value on risk, there are many risks involved in the grain trade for which the trader is entitled to be compensated. These include: changing market conditions and changing government policies.

In recent years the risk from government policy changes has been especially high. In 1983/84 in particular (the year for which our estimates were made) government policy changed frequently. The government tried to regulate inter-regional flows and tried to enforce official prices, especially in large urban markets. It also confiscated grain from some traders who were rumored to have purchased at

lower-than-official prices. All this made it very risky for merchants who continued to trade in grain. Many of the larger traders told us that the risks from changing government policy were too high to make grain trading worthwhile, and thus they withdrew from the business. These risks, which were particularly high in the post harvest period, explain somewhat the very high returns to capital in that period on some routes.

In spite of our explanations, the wide fluctuations in the return on capital do indicate that some excess profits due to market position are probably being earned by traders. In Chapter 6 we will discuss what, if anything, might be done about this.

3.6.3 Seasonal Price Fluctuations

An analysis of seasonal price fluctuations would indicate whether or not there are excess profits in the storage function -- are traders able to gain excess profits by storing grain from one season to another? The method suggested by Timmer, et. al. (1983) to analyze seasonal price indices requires prices for several years. Lack of data prevents us from using this method.

With the limited price data available we have calculated the percentage change in price from the harvest season to the soudure for several markets (see Table 3.10). These percent price fluctuations must be compared with storage costs -- monthly interest rates and storage losses -- to assess whether inter-seasonal storage reaps excess profits. The combined effect of various rates of interest and storage loss are shown in Tables 3.11a, 3.11b, and 3.11c.

Table 3.10 indicates that the range of seasonal fluctuation of prices varies widely from market to market. However, when compared with the percentage cost estimates of Tables 3.11a, 3.11b, and 3.11c, most do not seem unreasonable, considering realistic costs for the region.

Earlier we discussed the problem of what interest rate was a reasonable one. In 1984 the subsidized interest rate for agricultural loans to village groups was about 11%. A non-subsidized commercial rate was probably closer to 2-4% per month. The rate of storage losses depends on whether grain is stored on farm (about 2-10%), or in warehouses (probably closer to 15-20%). One must remember also that the percentages in Tables 3.11a-3.11c do not include the amortized cost of

TABLE 3.10

SEASONAL PERCENT CHANGE IN PRICE FOR SELECTED MARKETS IN 1984

	White Sorghum	Millet	Corn	Red Sorghum
Ouagadougou (Mean)	62% January/September	68% January/September	42% January/July	
Bobo-Dioulasso (Mean)	65% January/September	76% January/August	30% January/July	29% January/June
Dori	45% February/August			
Aribinda				
Dédougou		125% January/September		
Djibasso	92% January/August	93% January/September		
Nouna		93% January/August		
Solenzo		155% January/September		
Tougan		56% January/August		
Koupéla	60% January/August			

SOURCE: Sack and kilogram prices in Table G.2 - G.5.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 3.11a

ESTIMATED COST OF STORAGE FOR SEVEN MONTHS
AT VARIOUS RATES OF INTEREST AND STORAGE LOSS

Interest rate per month[a]	Storage Loss (Percent)						
	30	25	20	15	10	5	None
0%	43	33	25	18	11	50	0
1%	53	43	34	26	19	13	7
2%	64	53	44	35	28	21	15
3%	76	64	54	45	37	29	23
4%	89	76	65	55	47	39	32
5%	101	88	76	66	57	48	41
6%	114	100	88	76	67	58	50

NOTES: The cost-of-storage figures in the body of the table are percentages of the purchase value of the amounts left for sale at the end of seven months.

$$\text{Cost of Storage} = \left[\frac{(1+r)^t}{1-\%\text{storage loss}}\right] - 1;\ t=7$$

[a]Calculations assume interest is compounded monthly.

TABLE 3.11b

ESTIMATED COST OF STORAGE FOR EIGHT MONTHS
AT VARIOUS RATES OF INTEREST AND STORAGE LOSS

Interest rate per month[a]	Storage Loss (Percent)						
	30	25	20	15	10	5	None
0%	43	33	25	18	11	5	0
1%	54	44	35	27	20	14	8
2%		56	46	38	30	23	17
3%	81	69	58	49	41	33	27
4%	96	83	71	61	52	44	37
5%	111	97	85	74	64	56	48
6%	128	112	99	88	77	68	59

NOTES: The cost-of-storage figures in the body of the table are percentages of the purchase value of the amounts left for sale at the end of eight months.

$$\text{Cost of Storage} = \left[\frac{(1+r)^t}{1-\%\text{storage loss}}\right] - 1;\ t=7$$

[a]Calculations assume interest is compounded monthly.

TABLE 3.11c

ESTIMATED COST OF STORAGE FOR NINE MONTHS
AT VARIOUS RATES OF INTEREST AND STORAGE LOSS

Interest rate per month[a]	Storage Loss (Percent)						
	30	25	20	15	10	5	None
0%	43	33	25	18	11	5	0
1%	56	45	36	28	21	15	9
2%	71	60	50	41	33	26	20
3%	86	73	63	53	44	37	30
4%	103	89	78	67	58	49	42
5%	121	107	94	82	72	63	55
6%	141	125	111	99	88	78	69

NOTES: The cost-of-storage figures in the body of the table are percentages of the purchase value of the amounts left for sale at the end of nine months.

$$\text{Cost of Storage} = \left[\frac{(1+r)^t}{1-\%\text{storage loss}}\right] - 1;\ t=7$$

[a]Calculations assume interest is compounded monthly.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

the warehouse, or any other associated costs (such as personnel or fumigation).

Seasonal price fluctuations seem consistent with storage costs, except for those in the Volta Noire (Dédougou, Djibasso, Nouna and Solenzo). Some of the excessive fluctuation in the Volta Noire is due to the extremely poor harvests in other parts of Burkina Faso in 1983/84. If we were analyzing twelve-month moving averages these amplitudes would likely be somewhat diminished. A similar, though opposite, phenomenon occurs with prices in deficit regions in years of very poor harvest. The starting price is high, so the percentage change in price from harvest to soudure may be less than in a better year.

Before drawing the conclusion that anyone is earning excess profits, we must point out that the theory about the relationship between seasonal price fluctuations and the cost of storage is predicated on other assumptions, most notably that supply and demand conditions be the same throughout the entire period of the analysis. In the case of Burkina Faso this of course is not true -- supply and demand conditions change from week to week. With a sophisticated econometric model we might be able to separate out these different factors, but the data for Burkina Faso are insufficient to be analyzed in such a way.

Finally, we must remember that because we are using market prices as both the purchase and sale price, the margins we have calculated may be distributed between two intermediaries: the local trader who purchases from the farmer in the surplus region, and the regional or national trader who buys the grain from the local trader, transports it and then sells it.

Although the absolute magnitude of the price fluctuation is high, the percent change in grain prices seems within the range of the estimated cost of storage for most markets. The storage function does not seem to yield excess profits. This conclusion from the quantitative data is further supported by the fact that traders seemed to be most concerned with quick turn-over and not with inter-seasonal storage.

3.7 CHANGES OVER TIME

The marketing system changes in response to changes in supply and

demand conditions, government regulations, and conditions in other sectors of the economy. Traders spoke of some important changes during the last decade:

1. geographic flows;
2. methods of competition;
3. role of cereal banks;
4. responses to restrictions on grain flows; and the threat of enforcing official prices.

Each of the regional reports has detailed information on region-specific changes.

3.7.1 Geographic Flows

The direction of trade is one of the most noticeable differences in the market. The Yatenga, the area with the highest population density in all of Burkina Faso, used to produce a surplus. As chronic deficits have increased, traders have gone further afield to find grain. Whereas traders used to buy grain in Ouagadougou, as migration to the Volta Noire and Hauts-Bassins regions has increased during the last ten years, these areas have become the major supply points for Yatenga traders. Dori traders also must go further south and west.

Similarly, the Kaya area also used to be self-sufficient. Traders from Kaya now get grain from the Volta Noire, and from some of the Volta Valley areas that have been resettled by their kinsmen.

As a result of declining grain production (and production per capita) in the north, there is increased pressure to find sources of grain. This has caused traders to travel to more remote high production areas which used to have trouble selling their surplus because of transportation difficulties.

3.7.2 Competition

All the information we have on competition indicates that the grain trade has become increasingly competitive. Although particularly true in bad years, it is also a longer-term trend. Also, in a short-crop year, trade becomes increasingly concentrated because the costs of trading are higher.

Because of this increased competition, regional and national traders are becoming less confident in local agents. They are afraid that their agents will sell their grain out from under them to another trader. Also, in areas where grain has become more scarce, local traders who used to go to the producer's compound to purchase grain are now waiting for producers to bicycle their grain to them.

As a consequence of more consistently bad harvests, traders in many less productive areas have had to change their credit policies. Green sales (vente en herbe) used to be a popular way for producers to obtain cash before harvest and for traders to lock-in supplies. With poor harvests occurring more frequently, they have become a very risky business practice. In general we heard an increasing reluctance on the part of traders to give credit on the basis of the future grain harvest.

3.7.3 Community Organizations

Village groups were originally encouraged by the regional development organizations (ORDs) to facilitate agricultural extension and credit. Cereal banks were developed to help retain local surpluses, and to encourage an alternative to high-priced grain purchased from local traders in the soudure. Banks which have the requisite administrative know-how have functioned well. As these groups have matured, and with the encouragement of NGOs doing community organizing, they have become more active consumer groups. As explained earlier, in some deficit regions they have organized to buy grain outside the region, thus bypassing the local trader. Traders in these areas feel this as a strong threat.

After a review of the activities of NGOs throughout the country in 1984/85, the Ministry of Agriculture and Livestock directed the ORDs to take an active role in coordinating the activities of NGOs in order to promote more balanced development within their regions and to prevent undo concentration of efforts in a few villages. Within each ORD a section devoted to the "Monde Rural" is responsible for this.

3.7.4 Responses to Government Restrictions

At various times during the last 15 years, since the creation of OFNACER, different governments have announced restrictions on the private

grain trade. The restrictions have varied from declaring private trade illegal (early 1970s) to announcing official prices (yearly), with the threat of enforcing them in the private sector, to restricting interregional grain flows (1983).

Private traders respond either by adapting their grain trading activities to the threat, or by contracting them and focusing on other commercial ventures such as trade in shea nuts, imported rice, cement and other industrial products. For example, in late 1983 when the CNR government took a "get tough" stance on grain prices and flows, traders reported that they were turning over their inventories as quickly as possible to minimize the risk of having their grain confiscated. As a result, inventories which might have stayed in the producing region were moved out unusually early, thus increasing the probability that grain would have to be brought in later in the season. In response to the same policies some large traders decided to withdraw from grain trading altogether.

3.8 SUMMARY

The chapter began with a discussion of the theoretical paradigm generally used to evaluate market performance. We concluded that the paradigm is particularly difficult to apply to developing countries for theoretical as well as empirical reasons. The analysis which followed ran into many of those problems mentioned.

The analysis of market conduct focused on the ways in which traders compete at various levels of trade. Capital is the most important barrier to entering the grain trade and the most important single factor for competing effectively. Although there is a high degree of competition at each level, a large number of traders with large amounts of capital are an important force in the market.

There are more traders at every level in surplus regions, and thus competition is keener there than in deficit regions. The low incomes of rural households in deficit regions make selling grain a particularly risky business.

Collusion does occur among traders and among producers (by village

groups). Among traders collusion tends to break down as competition for grain increases.

An analysis of intraregional price correlations indicates that even when grain is not traded within regions, the markets are generally well integrated: price signals seem to flow between markets. Integration is better in surplus regions, where trade is heavier, than in deficit regions. And of course in each region the markets are better integrated for grains which are more heavily traded. Prices are considerably less well correlated across regions. On routes were there is a regular, heavy trade, markets are better integrated than on routes where less trade occurs. Also, markets on routes with high transport costs tend to be less well integrated with each other.

A limited analysis of seasonal price fluctuations indicates that for most regions there are probably no excess profits in the storage function. Markets in the Volta Noire may be an exception. Whether stored by farmers or traders, the value of grain from the Volta Noire which is stored for six to nine months appreciates significantly more than the cost of storage.

Marketing margins and return on capital are the main question mark in the analysis. Based on our "best guess" estimates of marketing margins, and the explanation of the range for variation between our calculations and the traders' actual margins, we are able to conclude very little about whether the return on capital indicates that traders earn "excess" profits. Inter-seasonal fluctuations in return on capital are high, and the seasonal pattern is different on different trade routes.

Finally, we considered the ways in which market performance has changed over time. The geography of flows has changed to respond to a long term trend in production levels, with greater pressure being placed on the western and southern regions and the volume of trade increasing into the Yatenga, the Centre-Nord and the Sahel. As a result of production decreases elsewhere, competition in the south and especially the west (Volta Noire) has increased. Community organizations such as cereal banks and village groups are playing an increasing role in the market. As government policy has changed over the years, the private sector has responded by developing new ways to operate with (or get around) the regulations, and in some instances it has responded by

dropping out of the market.

We will return to these results in Chapter 6 and consider what government can or should do in response. But first, we consider the market behavior of producers and urban consumers.

CHAPTER 4

PRODUCER BEHAVIOR[1]

This chapter draws upon case studies of five villages in western Burkina Faso. The first section provides an introduction to the villages, the 220 households sampled, and the survey methodology. Section two considers the market conditions faced by farmers. The focus is on the variability of those conditions over space and time, elements of competition and collusion by traders, and farmers' uncertain access to buyers and sellers. The third section analyzes the marketed surplus sold by farmers in our five survey villages and also by 102 farmers in four villages in a contemporaneous SAFGRAD/Purdue survey. Estimates are obtained for the importance of harvest, price, wealth, and related variables in determining marketed surplus. Section four discusses the sharp seasonal variations in Burkina Faso and how farmers deal with these in their efforts to insure their own food security and also to earn money in grain trading.

4.1 THE SAMPLE VILLAGES AND THE SURVEY METHODOLOGY

Two hundred and twenty farm households were sampled in five villages across three ecological zones. Between 42 and 51 farm-households are in each village sample. Enumerators questioned sample members every two weeks. Details of the survey methodology and copies of the questionnaires are presented in Appendix D.

The two northernmost villages studied, Mené and Bougouré, are in the Yatenga region in the northern reaches of the Sudanian savanna zone, bordering the drier Sahelian region farther north. Annual rainfall is between 500 and 800 mm, the lowest and least reliable levels in the areas studied. The rainy season is typically shorter than in the other villages. Yatenga has recently been a grain importer, and prices here are typically higher than in the central or southern areas of Burkina Faso, although they exhibit a similar seasonal pattern.

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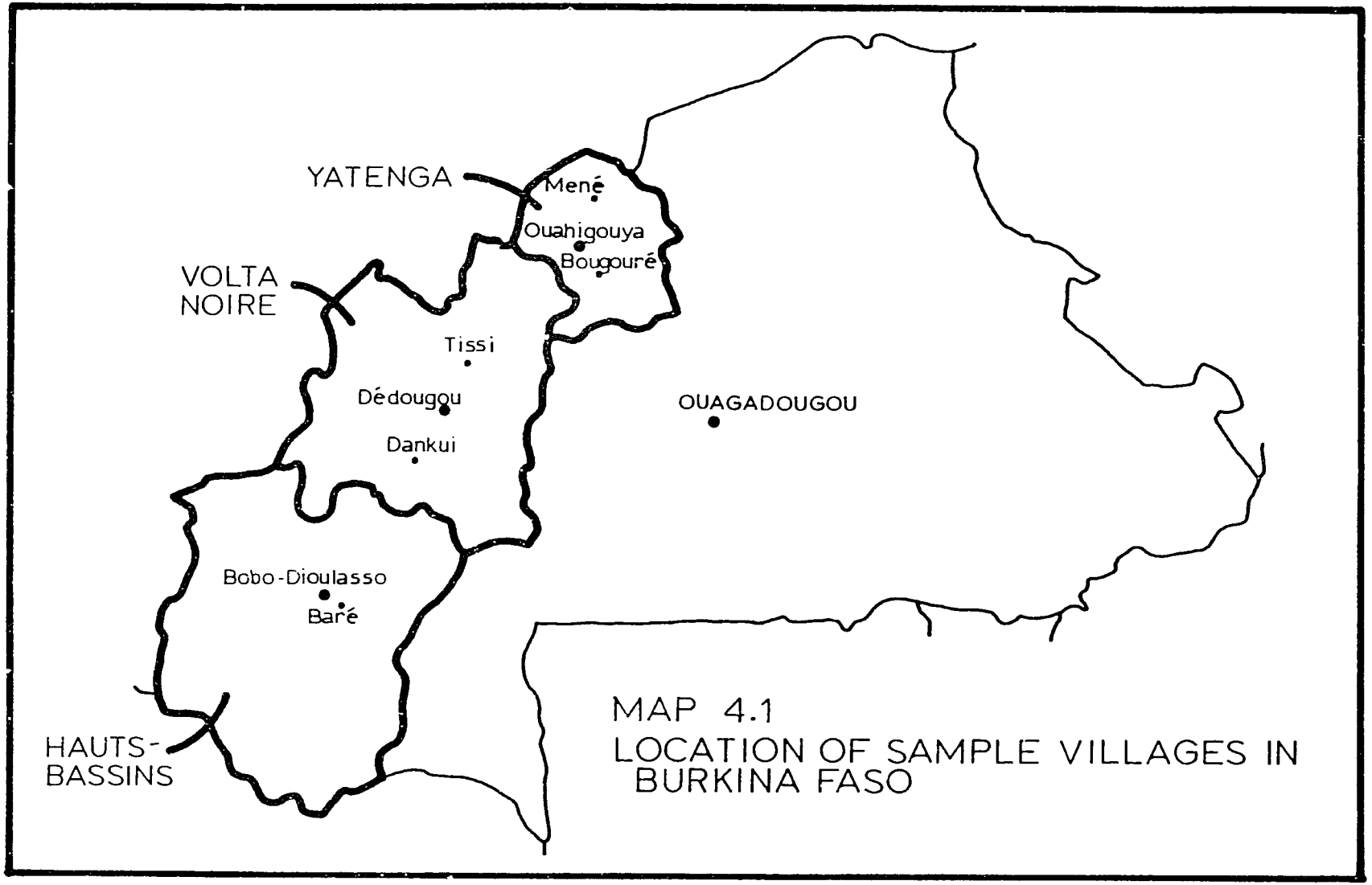
[1]This chapter is based upon separate papers by L. Ellsworth, I. Green, C. May, C. McCorkle, C. Pardy, M. Saul, K. Shapiro, and E. Szarleta (see Volumes III and IV for most of these).



MAP 4.1
LOCATION OF SAMPLE VILLAGES IN BURKINA FASO

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

Two villages, Tissi and Dankui, are in the west central Volta Noire region, an area that often exports grain and has more fertile soil. While it is also in the Sudanian savanna, the area receives slightly more rainfall than the Yatenga villages to the northeast. In recent drought years, such as the survey year, this area has become less of a surplus exporting region.

The southernmost village, Baré, is in Hauts-Bassins in the northern Guinean ecological zone, which is wetter and more humid than the Sudanian savanna where the other villages lie. Baré has often been a net grain exporter.

4.2 MARKET CONDITIONS FACING FARMERS

The market conditions facing farmers differ sharply between the post-harvest and preharvest periods; they differ over the regions studied; and they differ between villages in the same region. A key element in these variations is the presence and number of traders or government agencies willing and able to buy or sell grain in the quantities farmers desire. From one perspective this may be considered akin to an issue commonly considered in studies of industry structure, i.e., the number of firms in the industry. However, while a very small number of firms is perhaps just one end of the continuum, there are indications of qualitatively different effects when farmers face the possibility of <u>no</u> readily available sales outlet or purchase source. These include effects on the seasonal pattern of grain sales and on the importance of farmer/trader linkages. The more common effect on the ease of collusion regarding prices is also important.

4.2.1 Seasonal Variations

Seasonal variations in market conditions present something of a chicken-and-egg question. The end of the harvest marks the start of the buying season. Green reports that large traders with agents in small markets in the Volta Noire region give their agents a sum of money for grain purchases. As the buying season progresses, this sum is used up, agents can buy in smaller quantities, and finally agents conclude their

operations. Thus farmers may find the most buying agents and the best financed buying agents in the immediate post-harvest season.

A related phenomenon noted by Green is that large traders from Ouahigouya, a key trading city in the northern deficit region of Yatenga, come to the Volta Noire on buying expeditions soon after the harvest. Later in the buying season the Ouahigouya traders are not important sales outlets for Volta Noire farmers, whereas soon after the harvest those traders may be the very largest buyers.

Throughout the year most markets are attended by a variety of small volume buyers. The most regular of these are the vendeuses, market women who buy in very small quantities using small gourds (louches) as measures. They provide an outlet for farmers wishing to make small sales, but generally cannot deal in larger quantities (e.g. a tine of 16 kg or a sack of 100 kg). Almost all markets have vendeuses year-round.

Local traders and trader's agents also frequent local markets throughout the year. They are usually able to buy plates, tines, and sometimes sacks. Because they turn over their stock more slowly than the vendeuses, they may be more reluctant to purchase grain as the season progresses.

Thus farmers in some areas may be under pressure to make most of their sales in the immediate post-harvest period or face difficulties in finding buyers later on. The genesis of this situation deserves consideration. Why do traders not wait to buy later, allowing farmers to bear the costs of storage and the uncertainty of future prices? Part of the answer may be in the conventional wisdom that farmers have a pent-up demand for cash that they satisfy as soon as the harvest is in. Saul provides variations on that theme. He contends that much of the grain reaching market soon after harvest comes from farmers who need to pay off production credit, from laborers paid in grain who desire cash, and from recipients of "gifts" mandated by tradition (e.g. from a rich farmer to his widowed sister). All of the above may lead to an increase in grain offered soon after harvest.

On the other side, long distance traders wish to move grain from surplus to deficit areas before the next season's rains, which may commence as soon as five months after the prior harvest is complete. In addition, there may be an element of self-fulfilling prophecy involved.

A trader may want to buy his supplies before other traders do in order to avoid losing out completely. If all traders have this psychology, there will indeed be the possibility that a trader who delays will have difficulty amassing the quantity he desires.

Farmers' concerns about finding buyers and traders' concerns about finding sellers have contributed to the importance of ties between individual farmers and traders. Some of these ties tend to smooth out the seasonality because traders may guarantee to buy in any quantity at any time. However, these ties are not ironclad and traders try to steal each others' clients. (A similar phenomenon is observed in the West African cattle trade). Therefore a trader must be active in the market soon after the harvest for fear that his clients may miss him and turn to others.

Thus there are a number of factors that feed into each other and that in sum lead to very different market conditions facing farmers in different seasons during the year. As noted, these differences encourage greater sales soon after the harvest. The differences also affect competitiveness in the market, which will be discussed after a review of regional and local variations in market conditions.

4.2.2 Regional Variations

Regional variations in Western Burkina Faso can generally be traced to the differences in grain production in different areas. The number of traders and the ease of access to markets generally increase as one moves south from the deficit to surplus regions. Traders go to the grain, transport facilities arise to meet their needs, and market places proliferate. A good example of the latter is the creation of the Baré market in 1983. Saul notes that Baré farmers had grain and other products to sell and wanted better access to traders other than locally resident traders and other than in the nearest market about 10 kilometers away. The farmers petitioned the chief, who initially resisted for fear of increased thievery but finally agreed. Baré farmers do have access to two nearby village markets and the larger city market in Bobo-Dioulasso as well.

At the Baré market, which is in a strongly surplus area, Szarleta found four traders present throughout the year and six more in the

post-harvest season. Further north, in a marginal surplus area, Green found at most one trader/agent serving a village or several villages (outside the context of a formal marketplace). In the Gassan market he found only one large buyer, who was not always there. Still further north in the deficit Yatenga region the traders were mainly oriented to selling rather than buying. Thus, May found two large and four medium traders in the Mené market, and he notes that the two large ones also had shops in Ouahigouya and did their purchasing elsewhere. Also in the Yatenga, in the Bougouré market there was no resident trader, only several small sellers including farmers' wives.

4.2.3 Local Variations

Local variations can also be quite sharp, as seen above in the difference between Mené and Bougouré. Whereas Mené villagers are well served by their market, Bougouré villagers are not. The latter often have to travel considerable distances to buy grain. Mené is better off with respect to traders and also cereal banks (two in Mené and none in Bougouré) and OFNACER warehouses (one 15 km and another 28 km away) while Bougouré villagers have to go to Ouahigouya (34 km away).

4.2.4 Competitiveness

Competitive conditions vary with many of the above factors. However, none of the markets frequented by our sample households had conditions close to a perfect competition ideal (with the possible exception of the large city markets described elsewhere in this report). Quite the contrary is true. All the markets were characterized by only small numbers of traders capable of dealing in sizeable quantities. Green, Saul, and Szarleta all report price setting or collusion among these large buyers. As noted above, there are many more small buyers and there may be less collusion among them.

Saul reports the existence of associations of traders which fix the initial buying prices after harvest and then meet periodically to reset prices. Szarleta found one price setter in Baré. He was the agent of a large trader. He had transport that allowed him to get to the market before others and he dealt in large volumes.

While reports of collusion and price setting are common, also common are reports of various "adjustments." As is well known, traders change

the size of a supposedly standard volume measure for buying. Saul notes that such changes are easier to reverse than is a change in price per volume. Thus, traders are able to adjust the price per kilogram over time (in-between changes in price per volume agreed upon by the association) and they can adjust their offer price as supply and demand conditions vary. In addition, traders can negotiate purchases away from the marketplace and thereby avoid the scrutiny of their competitors. Indeed, these and other adjustments are so common that Saul reports one association decrying current conditions as anarchic, and he describes the agreed upon price as serving as a starting point for negotiation. This state of affairs may be due to the drought and the resultant shortage of grain for which traders must compete more intensely.

The above discussion of price setting refers to the private trading sector. Government also sets prices. However, the enforcement and effectiveness of government prices varies widely. This is discussed elsewhere in the report. In our study areas the government price was not the key determinant of market prices.

4.3 MARKETED SURPLUS

Marketed surplus of grain, as the term is used here, simply means the amount of grain that farmers sell. This is a gross measure as compared to net sales (sales minus purchases). Thus we are looking at the amount of grain that goes into the monetary market. This excludes grain given as gifts or payments in kind.[2] Those transfers are important and are treated separately. The first part of this section looks at the size of the marketed surplus by region, village, and household. One important finding is that in surplus areas about 20% of the harvested crop is sold. Most of this section tries to explain variations in the amount of grain sold by different households. The only consistently important explanatory variable is size of harvest.

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[2]These may show up if recipients sell the grain they receive.

4.3.1 The Amount of Marketed Surplus

The size of the marketed surplus relative to the size of the harvest in nine Burkina Faso villages is shown in Table 4.1. Five of these villages, Baré, Dissankui, Diapangou, Nédogo, and Poédogo may be classified as surplus villages which can usually produce more than enough grain for their needs. Mené and Bougouré, in the dry northern part of the country are chronically deficit villages, while Tissi and Dankui in the west central region have been deficit in the recent drought but often are marginally self sufficient.

Table 4.1 shows that the 322 households sampled in the nine villages sold 17.4% of their grain harvest. The five surplus villages in that group sold about 21.3% of theirs while the four deficit villages sold only 3.1%. These figures accord with rough magnitudes commonly estimated for the country. The differentiation between surplus and deficit villages is useful to bear in mind and becomes sharper if one looks at net sales. Net sales for the four deficit villages are strongly negative (i.e., they buy much more than they sell), while they are positive for the five surplus villages.

4.3.2 Household Participation

Household participation in grain marketing varied considerably across the villages, as might be expected. In the five surplus villages, 84% of the 154 sample households sold grain. In three of the deficit villages (Mené, Bougouré, and Dankui) only 12% of the 130 sample households sold grain. Tissi is in an intermediate position with 60% of the sample households selling grain.

4.3.3 Sales Per Household

The volume of sales per selling household also showed sharp differences between surplus and deficit villages. In the five surplus villages there was an average of 480 kg sold per selling household, with the village averages varying between 287 and 638. In the four deficit villages the average was 95 kg per selling household with the village means varying from 13 to 169. A similar pattern exists with regard to sales per capita and per producer or consumer unit.

TABLE 4.1

GRAIN SALES AND HARVESTS IN NINE BURKINA FASO VILLAGES, 1983-1984

Village	Households in Sample	Households That Sold Grain	Total Grain Sales (kg)	Total Grain Harvests (kg) by all Sample Households	Sales/ Harvests %
Mené	46	7	1,175	37,319	3.1
Bougouré	42	6	75	8,017	0.9
Baré	50	47	30,001	136,003	22.1
Tissi	40	24	2,043	21,247	9.6
Dankui	42	3	506	18,620	2.7
Dissankuy	27	13	4,859	32,809	14.8
Nédogo		28	8,033	38,873	20.7
Poédogo	75	18	8,799	35,355	24.9
Diapangou		22	9,765	45,800	21.3
Total	322	168	65,256	374,043	17.4

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

4.3.4 Explaining Variations in Marketed Surplus

Why do some households sell more grain than others? Are the reasons amenable to manipulation by government policy? These questions motivated the analysis for this section. The most common assumption is that the main determinant of marketed surplus is total grain harvest. And, indeed, that is borne out in the analysis. But to what extent are non-output variables important? Are there policies that government can manipulate outside their efforts to increase output? Certainly the World Bank and USAID now seem to think there are many such policy handles.

Regression analysis of grain sales in nine Burkina Faso villages by Pardy and Szarleta shows that output is the only consistently significant explanatory variable. Price and cash crop acreage were never significant, and animal ownership was only significant in one village. Analysis of price is of course difficult with just a single year of data,

since this limits one to seasonal and spatial variations rather than interyear variations. Animal ownership was positively related to sales in Dissankui.[3] Interestingly, in two villages, Poédogo and Diapangou, the regressions on grain sales were not significant. That is, even harvest did not prove to be a strong explanatory variable.

Where size of harvest is the key factor, do farmers with larger harvests tend to sell a larger portion of any increment in their harvest? Should government focus on large producers because they will tend to market more of any increase in their output? Szarleta estimates a polynomial function to see whether the marginal propensity to market out of harvests increases with the size of harvest. She finds that this is not the case in the five western villages studied (Tissi, Dankui, Mené, Bougouré, Baré). Sherman (1984) found similar results for the Manga region in south central Burkina Faso.

4.4 SEASONALITY

Seasonality is a key issue in the grain economies of many semi-arid African countries. The abundance of grain after the harvest often turns into scarcity before the next harvest. Very low post-harvest prices become very high pre-harvest prices. How do farmers and governments deal with these seasonal variations? This section attempts to address that question. First, the nature of seasonality in the Burkina Faso grain economy is described. Then farmer behavior related to seasonality is examined.

4.4.1 The Nature of Seasonality

In the five villages studied under this project the rainy season typically lasts between 134 days, in the most southerly village of Baré, and 100 days, in the most northerly villages of Bougouré and and Mené. "Normal" annual rainfall in Baré is 1100-1200 mm and in Mené 500-800 mm. The rains begin in May or June and end in September. The main grain harvests begin in October or early November, with some maize harvested in

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[3]Animal ownership is one form of wealth. An analysis of the impact of wealth on sales behavior will be undertaken in the future.

September. Grain prices in markets serving the sample villages plummet at harvest time and then increase throughout the next twelve months reaching a peak in October. Increases of 50% in consumer and producer prices are not uncommon. See, for example, Figures 4.1 and 4.2.

The welfare and incentive implications of these price patterns may be causes for government action. As discussed more fully below, there is a tendency for farmers in our sample to concentrate sales in the six months after the harvest, and there is an even stronger tendency for them (not necessarily the same individuals) to buy more just before the next harvest. That is, the data offer some support for the hypothesis that African farmers sell low (post-harvest) and buy high (pre-harvest). However, this picture must be disaggregrated before it can provide useful policy guidance.

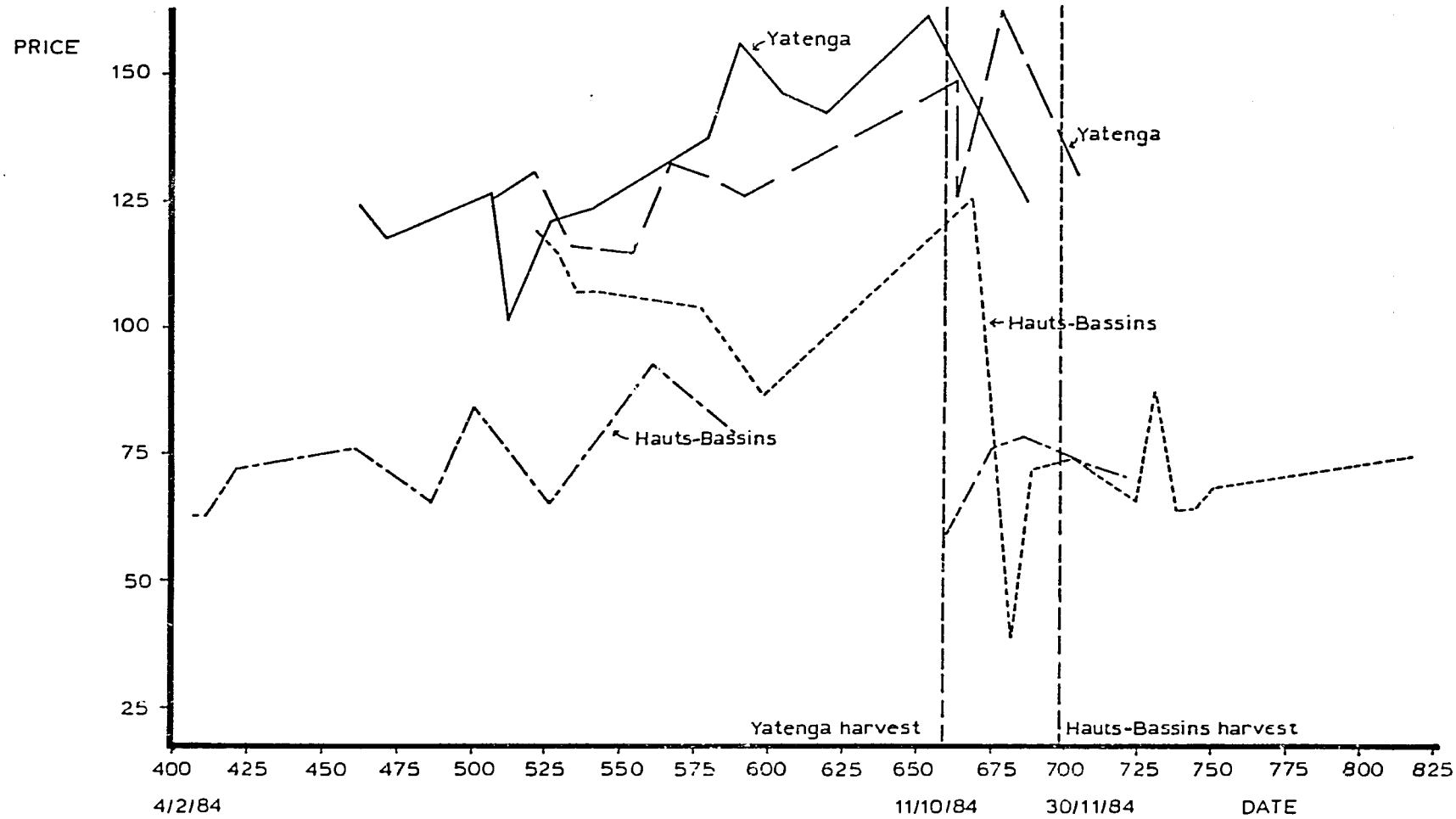
4.4.2 Seasonality in Grain Sales and Purchases

Perhaps the most common characterization of staple food marketing in Africa is that farmers sell in the post-harvest, low-price season and buy in the pre-harvest, high-price season. Explanations for this supposed pattern include outdated notions of peasant irrationality, sales tied to paying off loans, taxes, pent-up demand for cash purchases, fear of having to share surplus grain as the hungry season approaches, seasonal variations in access to buyers and sellers, and others. This section first documents the seasonal pattern of transactions in the five villages studied under this project. The conventional wisdom is borne out for purchases more strongly than for sales, but there are large amounts sold and bought in all seasons.

As shown in Figures 4.1 and 4.2, grain prices start falling rapidly in October in the markets serving the sample villages. Thus the post-harvest "quarter" is defined as October 11 to December 28. The remaining quarters are January-March, April-June, and July-October 10. The seasonal transaction pattern for the total sample is shown in Table 4.2.

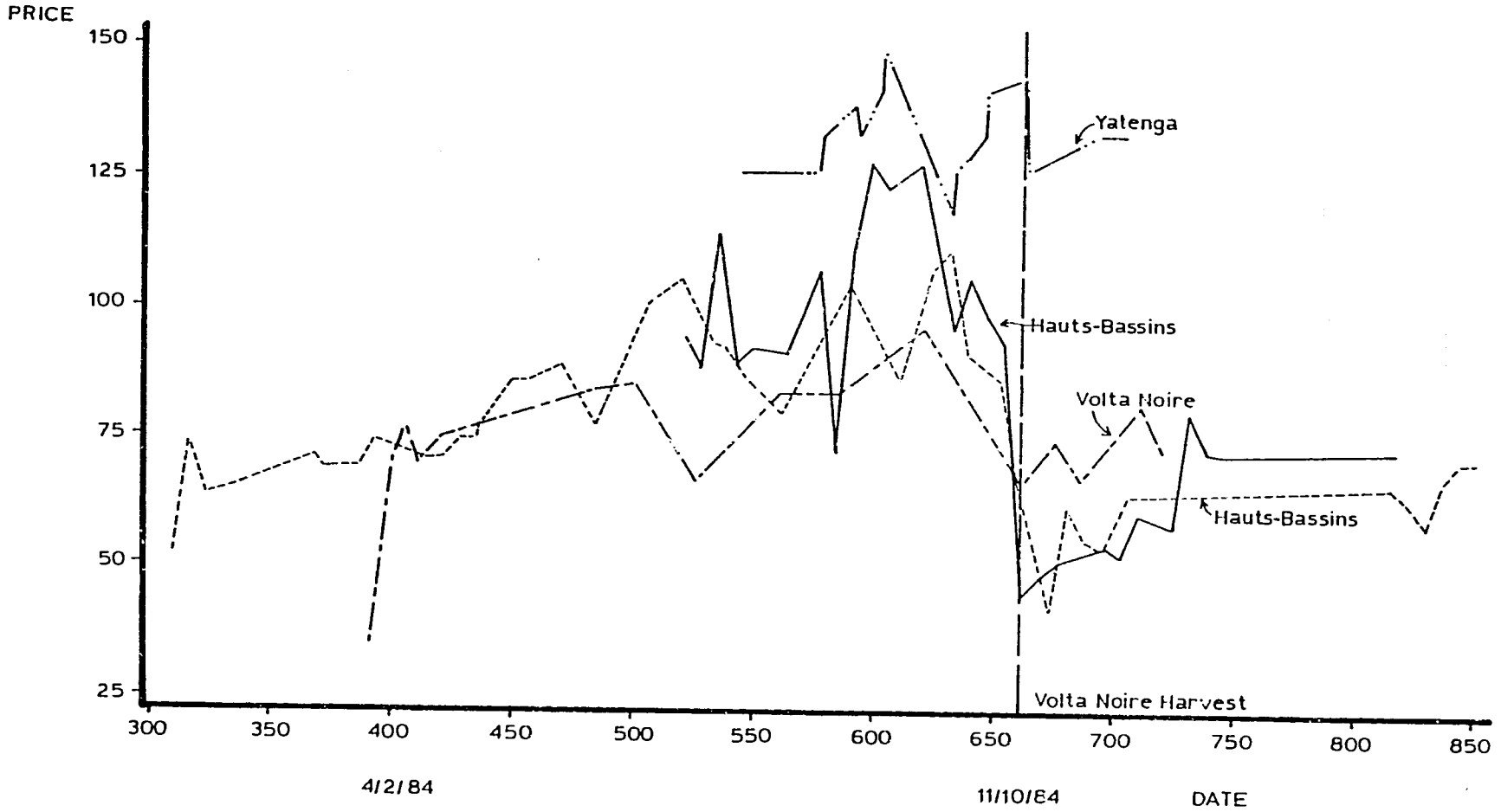
The sales pattern appears more evenly distributed than is typically thought. The largest grain sales do not occur immediately post-harvest, but rather in the following quarter. No quarter has less than 17% of sales and none more than 33%. The purchase pattern follows the conventional more closely with most grain purchased in the pre-harvest

FIGURE 4.1 VILLAGE MARKET PRICES OF MILLET
producer price (per kg)



SOURCE: Prices collected by village study teams.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

FIGURE 4.2 VILLAGE MARKET PRICES OF WHITE SORGHUM
producer price (per kg)



SOURCE: Prices collected by village study teams.
University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

period. The range is from a high of 43% pre-harvest to only 9% post-harvest.

TABLE 4.2

GRAIN SALES AND PURCHASES BY QUARTER FOR FIVE BURKINA FASO VILLAGES,[a] 1984

	Jan-Mar	Apr-June	July-Oct	Oct-Dec
Sales[b] (kg)	9,520	4,885	6,347	7,811
(Percent of Annual Total)	(33%)	(17%)	(22%)	(27%)
Purchases[c] (kg)	25,366	35,846	57,158	12,085
(Percent of Annual Total)	(19%)	(27%)	(44%)	(9%)

NOTES: [a]Mené, Bougouré, Baré, Tissi, Dankui.

[b]Sorghum, Millet, Maize.

[c]Sorghum, Millet, Maize, Rice, Food Aid, Miscellaneous Foods.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

This picture of seasonal transactions is modified if one looks at individual household behavior. Table 4.3 shows the number of households that made the largest amount of their sales or purchases in the quarter shown. Examination of individual household selling patterns reveals that the post-harvest quarter is indeed the heaviest sales period for the largest number of households, and that the two post-harvest quarters are the heaviest sales period for 81% of farmers selling more than 25 kg in the year. Purchase data at the household level show that many households do buy heavily before the high-price, pre-harvest season, but the pre-harvest season does show the greatest number.

In sum, the seasonal transaction patterns observed in the five sample villages provide some support for the conventional wisdom that African farmers sell low and buy high. However, the pattern is not extreme and there is evidence that some farmers contradict it. For example, 22 of the 68 households that sold more than 25 kg made less that 15% of their sales in the post-harvest quarter. That is, almost one third of the

TABLE 4.3

NUMBER OF HOUSEHOLDS WITH THEIR LARGEST VOLUME OF SALES AND PURCHASES IN EACH QUARTER IN FIVE BURKINA FASO VILLAGES[a]

	Jan-Mar	Apr-June	July-Oct	Oct-Dec
Sales[b]	21	5	8	35
Purchases[c]	45	61	64	7

NOTES: [a]Households selling more than 25 kg and buying more than 50 kg

[b]Sorghum, Millet, Maize.

[c]Sorghum, Millet, Maize, Rice, Food Aid, Miscellaneous Foods.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

sellers did not sell very much at the worst time with respect to price. This subset of households is investigated further below.

Disaggregation by village provides further insights into seasonal patterns. Tables 4.4 and 4.5 show, by village, the number of households whose heaviest sales and purchases occur in each quarter. The sharpest differences are between Baré, a relatively wealthy, surplus village, and the others which are poorer and either chronically or occasionally deficit in cereals. The largest number of Baré households made their heaviest purchases between January and March rather than waiting until later in the season when prices were higher. In the other four villages the following two quarters, of progressively higher prices, saw the largest number of households making their heaviest purchases. Comparative analysis of sales is difficult because two thirds of those who sold over 25 kg were in Baré. Comparing Baré with Tissi, the village with the next largest number of sellers, reveals that proportionately more Baré farmers avoid making their heaviest sales in the post-harvest quarter. Thus the relatively well-off, surplus village seems to suffer least from the strong seasonality in grain prices. The "sell low, buy high" characterization fits Baré less well than it does the other poorer, deficit-prone villages.

4.4.3 Grain Marketing Compared to Other Grain and Cash Transfers

Other grain and cash transfers provide a useful perspective on the importance of grain marketing. Income derived from grain sales by the sample was small compared to total cash receipts. Grain and other crop (e.g. cotton and peanut) sales together amounted to only one third of cash receipts.

Grain sales (kg) in the four deficit villages were smaller than the amount of grain those villages gave in nonmarket transfers. In contrast, grain purchases in those villages far exceeded grain received from nonmarket sources. These data are summarized in Table 4.6.

The seasonality of other transfers has elements similar to the seasonality of grain marketing. As shown in Table 4.7, nonmarket grain transfers peak in the post-harvest season, with the pre-harvest season being next in importance. This is consistent with Saul's contention that

TABLE 4.4

NUMBER OF HOUSEHOLDS WITH THEIR HEAVIEST GRAIN PURCHASES IN EACH QUARTER, BY VILLAGE[a,b]

	Jan-Mar	Apr-June	July-Oct	Oct-Dec	Total
Mené	12	16	13	2	43
Bougouré	16	21	8	0	35
Baré	14	6	9	4	33
Tissi	5	8	15	0	28
Dankui	8	10	19	1	38
Total	45	61	64	7	177

NOTES: [a]Sorghum, Millet, Maize.

[b]Households buying more than 50 kg

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 4.5

NUMBER OF HOUSEHOLDS WITH THEIR HEAVIEST GRAIN SALES IN EACH QUARTER, BY VILLAGE[a,b]

	Jan-Mar	Apr-June	July-Oct	Oct-Dec	Total
Mené	2	0	3	0	5
Bougouré	0	0	0	1	1
Baré	16	4	4	23	47
Tissi	1	1	1	9	12
Dankui	2	0	0	1	3
Total	21	5	8	34	68

NOTES: [a]Sorghum, Millet, Maize.

[b]Households selling more than 25 kg

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 4.6

MARKET AND NONMARKET GRAIN TRANSFERS (kg)

	Sales	Purchases	Nonmarket Transfers In	Nonmarket Transfers Out
Mené	1,175	30,340	1,817	476
Bougouré	75	18,420	1,894	596
Tissi	2,043	24,163	8,847	14,593
Dankui	506	15,576	591	1,913
Total	3,799	88,499	13,149	17,578

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

payments for agricultural work and "obligatory" gifts result in high transfers around the harvest, and that these are subsequently sold and swell the post-harvest sales glut.

This point is reinforced by the reasons farmers offered for the transfers they gave in different seasons. A "gift" was cited more often in the post-harvest quarter than in any other quarter; and during the post-harvest quarter, "gifts" were cited more than any other reason. Paying a work party was cited far more in the pre-harvest quarter than in any other quarter, and during that quarter it was the most commonly cited reason. It is also during the pre-harvest period that emergency help is cited much more (81%) than in any other quarter, but it is cited for only 9% of the total number of transfers in the pre-harvest quarter. In the second quarter after the harvest, i.e., January to March, funerals are cited as the main reason for gifts given. In the following quarter relatively little grain is transferred and various reasons are given (e.g., "maintain relations," "miscellaneous payments," "other".) In sum, there is a substantial interhousehold, nonmarket movement of grains with the stated reasons varying through the year. In the pre-harvest it is payment of work parties, then in post-harvest it is gifts, then funerals in January-March, and finally a variety of reasons in April-June when the volume transferred is low.

TABLE 4.7

NONMARKET TRANSFERS OF GRAIN AND MONEY BY QUARTER[a,b]

Total	Jan-Mar	Apr-June	July-Oct	Oct-Dec
Grain Received (kg)	2,192	1,656	4,153	7,590
Grain Given (kg)	5,601	801	5,867	11,458
Money Received (1000 CFA)	1,484	3,691	1,399	899
Money Given (1000 CFA)	1,228	2,294	1,187	570

NOTES: [a]Mené, Tissi, Dankui, Bougouré with minimal data for Baré.

[b]Amounts given do not match amounts received because of inflows and outflows to and from the sample.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

With regard to money transfers, perhaps the most interesting fact is their concentration between April and June. Some of this may represent gifts aimed at helping families buy grain as the hungry season approaches. The data have not yet been analyzed to the point of being able to see the role of remittances from family members away from home. The reasons for money given in transfer do not show very clear seasonality.

Finally, since grain sales must be understood within the context of the entire household economy the relative price of grain compared to prices of other assets (e.g., livestock and cash crops) in different seasons must be considered. Deferring to a general model of intertemporal resource allocation, if the relative price of grain varies seasonally, farmers would prefer to generate revenues by selling grain in seasons when its relative price is high, and similarly would prefer to sell livestock or cash crops when their relative prices are highest. For example, during the harvest period from October through December, although grain prices are at their annual low and will rise in all the subsequent periods, animal prices are also rising and will begin to fall again in March/April. Therefore we would expect animals to be sold in preference to grain in January-March, the early dry season. Based on relative prices farmers might prefer to sell grain instead of animals at harvest, October-December. In spite of the fact that grain prices are at their annual low, it could be more economic to sell grain and hold onto animals for several more months. Obviously, if the household does not have animals it cannot choose not to sell them. In that case it would sell grain in the first period without saving animals to sell in the second.

This suggests that even those households which sell grain just after harvest may be behaving more rationally than it appears. Farmers, of course, are acutely aware of relative price differences.

4.4.4 Household Variations in Marketing Patterns

Some households appear to suffer from the "sell low, buy high" syndrome while others avoid the worst effects of seasonality and still others seem to take advantage of seasonal price movements. The government of Burkina Faso would be able to target its interventions more

efficiently if it could identify different marketing patterns and the types of households pursuing each one. This section presents one effort to do this.

Fifteen households had a sales pattern that took advantage of the seasonal price increase. They made more than 60% of their sales in the six months preceding the harvest, i.e., during the higher price periods. This group is wealthier and perhaps more market-oriented than the rest of the sample. While comprising only about 7% of the 220 households in the sample, they own 25% of the sample's cattle and 10% of the value of durable goods, and they account for 38% of the total sales by sample. The average household in this group sold 944 kg of grain compared to a sample average of 155 kg. (Among those who actually sold any grain, the average amount sold was 389 kg).

In contrast to this group are 27 households that seem to be taking losses because of the seasonal price movements. This group includes those that buy more than 60% of their year's purchases in the six months prior to harvest and/or make more than 60% of their yearly sales in the six months after the harvest.[4] These households are extremely poor in cattle but are slightly above average in value of durable goods. They have a relatively small area under cultivation (6.33 ha vs. the sample mean of 7.62 ha) even though their family size is larger than average (7.89 consumer equivalents vs. 6.86 for the sample). Also, they have more of their land in cash crops (cotton and peanuts) than average (13% vs. 10%). The average amount sold and purchased by these households is close to the sample mean.

There are two types of marketing patterns that seem to imply neither significant gains nor losses from seasonal price movements. A group of 25 households are fairly autarkic, making no purchases and selling less than 100 kg during the year. They cultivate more land (8.07 ha) than the sample average and have less of it in cash crops (7% vs. 10% for the sample). These households have considerably fewer cattle than average (.38 vs. 1.91 head per household) but about the same value of durable goods. Another group, comprising slightly more than half the sample (112

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[4]The latter criterion also requires at least 100 kg of sales in the year.

households), managed to avoid taking losses caused by seasonal price lows or highs. They either made less than 15% of their total sales in the three months after the harvest or they made less than 15% of their total purchases in the three months prior to the harvest.[5] That is, they avoided the worst price periods for their sales and/or purchases. However, they were not particularly adroit in concentrating their sales in the high price period. In most respects this group was similar to the sample mean, which is not surprising since they are the majority of the sample.[6]

The above characterizations of grain marketing patterns may be useful in guiding government interventions to target groups that need help. Perhaps the major finding here is that 137 of the 220 households either do not interact significantly with the grain market or manage to avoid taking major losses from seasonal price movements. A very small group seems to benefit from those movements, and about 12% seem to be suffering from them. This latter group may be the appropriate target for government action related to seasonality.

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[5]That is, a "sales-loss avoider" household made less than 15 percent of its total sales in the post-harvest quarter and did not take sufficient losses in purchases to be classified with the prior group having more than 60% of purchases in the pre-harvest period. Similarly for "purchase-loss avoiders."

[6]Another group of households that closely resemble the sample average is best characterized by their pattern of buying heavily during the low price season.

CHAPTER 5

CONSUMER BEHAVIOR

The preceding chapter discusses purchasing as well as selling behavior of rural producers. About 8-10% of the population, however, does not produce any grain. The largest group of these consumers lives in urban areas. Their main (if not only) interaction with the grain marketing network is as purchasers. Consumers buy grain in two forms: as unprocessed cereals to be prepared at home; and as already prepared food, beer, rice and sauce, cakes, and other assorted dishes. These purchases are the final step in the grain marketing chain.

Thus, the purchasing activity of consumers and prepared food sellers comprises most of the retail grain business in urban areas. This chapter focuses on the grain marketing (purchasing) behavior of these two groups of urban consumers.[1]

The data analyzed in this chapter come from surveys conducted in Ouagadougou and Bobo-Dioulasso. The sample of consumers includes 108 households in Bobo-Dioulasso and 125 households in Ouagadougou, a proportional random sample by neighborhoods for each city. The sample of prepared food sellers was also a modified proportional random sample, selected to represent the different neighborhoods and types of prepared foods. Seventy-five sellers were interviewed in each city. A detailed explanation of the urban study data collection methodology is given in Appendix E. Tables presented in this section refer to the entire sample. Separate tables for Ouagadougou and for Bobo-Dioulasso appear in Appendix F.

This chapter begins with several short case studies to illustrate typical purchasing behavior. These cases are followed by two sections covering the purchasing behavior of final consumers and prepared food sellers; each of these sections includes an analysis of data on trading partners, size, location and timing of transactions, and cereal prefer-

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[1]This chapter is concerned with marketing behavior, not consumption behavior. The IFPRI/CEDRES study focuses on consumption behavior of households living in Ouagadougou. Other consumption studies for Burkina Faso are referenced in Haggblade (1984).

ences. A brief section discusses behavior of institutional purchasers. Finally, the chapter concludes by noting the importance of different marketing channels for meeting consumer demand.

5.1 CONSUMER CASE STUDIES

The purpose of this section is to place grain purchasing behavior within the context of urban life. The six cases, three consumers and three prepared food sellers, were culled from an analysis of the interviews. The consumer cases were chosen to illustrate the behavior of families of different socioeconomic status -- the factor we feel is most important in determining individual purchasing behavior. The prepared food seller cases were chosen to illustrate the behavior of sellers who prepare different types of food. The combination of capital availability and the type of food prepared seems to be most important in determining the purchasing behavior of prepared food sellers.

5.1.1 Middle Income Family in Ouagadougou

Jean Ouédraogo works at the Caisse Nationale de Sécurité Sociale in Ouagadougou. His wife is a midwife at the Gounghin maternité (maternity center). Madame Ouédraogo likes to have rice and sauce prepared for lunch, and a white sorghum tô for dinner. During the months just after harvest they will often alternate between corn and white sorghum for the evening meal. Her children have bouillie (porridge) in the morning, and she and her husband eat bread with their coffee.

They do not live far from the Gounghin market, where there are a few traders whom they have known for years. At the beginning of every month Jean goes to the central market to buy a 100 kg sack of white sorghum. He prefers to trade with a medium-sized trader whom he has known for years. Usually he is able to pay in cash, but on occasion he has had to purchase on credit. Since rice goes a bit farther, they only need a 100 kg every two months. He buys the rice from a different merchant who has a shop not far from their house in Gounghin. Every morning Madame Ouédraogo sends the cousin who helps her with the cooking and cleaning around the corner to buy a large bowl of bouillie from the vendeuse who is their neighbor. On the way back she stops to buy a loaf of bread in front of the market.

5.1.2 Lower-Middle Income Family in Ouagadougou

Madame Sawadogo's family, also living in Ouagadougou, is not quite as well-off. Her husband is paid less, and receives his salary every two weeks. She sends her eldest son to the OFNACER warehouse to buy a 50 kg sack of rice almost every month. She buys one tine of white sorghum every week from a small trader in the Zogona market. If she runs out toward the end of the month she buys an additional plate or two from a vendeuse at the edge of the market. Usually her family will eat bouillie for breakfast. Usually she makes it herself, but sometimes she buys it from a woman who prepares it just around the corner.

5.1.3. Lower-Middle Income Family in Bobo-Dioulasso

The Traoré family lives in Ouézzinville, Bobo-Dioulasso. Moussa Traoré is a petty merchant who sells small tools and bicycle parts in the Farakan market. They have two very young children who do not eat very much yet, so Madame Traoré does not prepare lunch everyday. For dinner she always prepares some kind of tô. She buys whatever ingredients she needs each day. She usually buys from a vendeuse who sits outside the market. Once in a while they are lucky and a relative from their native village near Solenzo comes to stay with them and brings a bag of grain, but this happens rarely. If Moussa's business is not going well, they are always afraid that they will have to borrow money to buy food or find a merchant who will sell to them on credit. But they are really afraid they will not be able to repay the loan. Then they would really be stuck.

5.1.4 Dolo Brewer in Ouagadougou

Anna Marie Guigma has a large dolo (local beer) brewing operation in Gounghin. She provides dolo to about a dozen dolo sellers who have cabarets in the area around the Gounghin market. She does a complete brew every three days. Other women in the neighborhood provide beer on the days when she does not. She would prefer to sprout her own red sorghum, in order to insure the quality of her beer, but it is very time-consuming (a six-day process), and right now she does not have an extra person who can help her with that. So, she buys bags of sprouted sorghum from a trader she knows who goes to Manga every week to buy from

the women there. In the beginning, many years ago when she first started, she used to buy the sorghum on credit, which she would reimburse the following week when she bought more. Now her business does so well that she does not have to buy on credit. She is one of the trader's best customers.

5.1.5 Rice and Sauce Seller in Bobo-Dioulasso

Fatimata Traoré has a small business near the Saint Etienne market in Bobo-Dioulasso. Everyday she prepares and sells rice and sauce. She has been doing this for about a year. Her profits are still small, so she cannot yet buy an entire sack of rice at time, but she does not need to buy on credit. She purchases about 2 kg of rice a day from a merchant on the outside of the market. She has thought about buying from OFNACER, but she would have to pay someone to transport the sack from the warehouse to her home, which would be expensive, and she is not sure of the quality of the rice. At least with the trader she knows her customers will be pleased.

5.1.6 Boules d'Akassa Seller in Bobo-Dioulasso

Claudine Coulibaly sells boules d'akassa along with many other women at the side of the road near the autogare (bush taxi station). She would like to sell everyday, but usually she is there only three or four days a week. She is just starting, so she does not have very much capital. She buys millet by the tomato box, which she can get on credit from a small retailer near her house. On her way home she stops to pay for the purchase from the money she has earned that day. She, like many of the other women, prefers to sell millet cakes during the month of Ramadan. Business is very good at that time, and many women who do not usually sell food try to make some extra money during that month.

5.2 PURCHASING BEHAVIOR OF FINAL CONSUMERS

Grain is the major staple of urban diets. Some is eaten at almost every meal, and at a minimum it is the basis of the principal dish once a

day.[2] White sorghum, millet, and corn are consumed in the greatest quantities. Rice, increasingly eaten by urban consumers, is still considered a luxury good by many households.[3] Red sorghum is eaten as a grain of last resort. No sample members said they bought any.

All households purchase some grain. The amount of grain purchased, from whom, how often, and where are affected by various socioeconomic factors such as household income and the frequency of its receipt, the location of the household vis-à-vis traders and other sellers, and the availability and cost of transport. This section presents data on various aspects of consumer purchasing behavior. Inferences and conclusions are made in Section 5.5.

5.2.1 Trading Partners

Urban consumers can purchase cereals from several different sellers: producers, traders, vendeuses, OFNACER, and Faso Yaar (for rice). Table 5.1 shows their choices of trading partner for purchasing different grains.

Consumers in both cities show a preference for buying from traders, rather than from OFNACER or the government store (Faso Yaar). Their responses indicate that at least 45% of the purchases of each type of grain are made with traders. The percentage is even higher in Bobo-Dioulasso, at least 65%.

The percentage of purchases made from OFNACER seems to vary considerably by grain. OFNACER is used more often for buying corn and rice than for millet and white sorghum. Consumers in Ouagadougou use it more often (7-30% of the time) than those in Bobo-Dioulasso (3-6% of the time). This can be explained at least in part by the fact that grain is more readily available in Bobo-Dioulasso and that market prices are lower than in Ouagadougou. Corn and rice in particular are more readily

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[2]This is not to imply that every family necessarily eats it everyday. Unfortunately this is not always so. But, families which can afford to follow usual dietary customs eat a meal where grain is the major ingredient of the dish at least once daily.

[3]Rice is usually eaten at lunch and other grains in the evening. Breakfast may be a warm porridge (bouillie), last night's leftovers, or bread.

TABLE 5.1

CHOICE OF SELLER BY URBAN CONSUMER FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice
Producers (1)	7 (3.9)	1 (1.6)	4 (4.5)	1 (0.5)
Vendeuses (2)	13 (7.3)	4 (6.3)	10 (11.2)	6 (2.7)
Small or medium trader (3)	59 (33.0)	30 (47.6)	24 (27.0)	101 (45.5)
Large trader (4)	12 (6.7)	7 (11.1)	5 (5.6)	12 (5.4)
FASO YAAR (5)	-	-	-	4 (1.8)
OFNACER (6)	23 (12.8)	4 (6.3)	21 (23.6)	30 (13.5)
Producer or small/medium trader (13)	1 (0.6)	-	-	-
Bought from OFNACER through the employer (17)	-	1 (1.6)	-	-
Vendeuses or Small/medium trader (23)	6 (3.3)	2 (3.2)	-	6 (2.8)
Small/medium or large trader (34)	27 (15.1)	7 (11.1)	11 (12.3)	10 (4.6)
Trader or FASO YAAR (35)	-	-	-	1 (0.5)
Trader or OFNACER (36)	13 (7.3)	6 (9.5)	5 (5.6)	19 (8.7)
FASO YAAR or OFNACER (56)	-	-	-	1 (0.5)
Large trader or military camp (67)	1 (0.6)	-	-	1 (0.5)
No response/no particular seller (8)	4 (2.2)	-	-	3 (1.4)
Other (7)	10 (5.6)	1 (1.6)	9 (10.1)	26 (11.7)

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

available there than in Ouagadougou. Consumers cite credit, the availability of grain, the convenience of location, and the higher quality of the grain as reasons for preferring to purchase from traders. They are aware of the price difference between grain sold by traders and that sold by OFNACER.

Among the different types of traders, consumers seem to deal more frequently with small or medium traders than with large-scale traders. This is true in both cities. The small or medium traders retail in amounts from a tine to an entire sack. Large-scale traders do not usually sell in quantities of less than a sack.

A third major category of sellers are the vendeuses, who sell in very small quantities. For the entire sample they are used only 3-11% of the time. They seem more important for consumers in Ouagadougou, especially for purchasing corn. Even fewer consumers say that they buy directly from producers (1-5%), fewer in Ouagadougou than in Bobo-Dioulasso.

5.2.2 Size of Transactions

Grain is generally sold in quantities varying from a ladle to a 100 kilogram sack. Table 5.2 shows the amount of each grain which consumers said they buy at one time. The sample shows a clear preference for buying in quantities of one tine or a 100 kg sack, with a large variation in the actual percentage for different grains. Rice is also often bought in 50 kg sacks or by the kilogram. It is the only grain sold by weight.[4]

The other popular unit of purchase is the plate (about 2.5 kg.).[5] In Ouagadougou 14-21% of the purchases of white sorghum, millet, and corn are made using this measure. It is used very infrequently in Bobo-Dioulasso, with no one in the Bobo-Dioulasso sample saying they purchased with it.

It is interesting to note that few sample members say they buy coarse grains in measures less than a tine. The ladle was not even mentioned.

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[4]Most rice sellers have scales and sell by the kilogram. Some sellers prepackage quantities of rice in plastic bags, which they say weigh one kilogram. The experience of different team members suggests, however, that those bags often weigh considerably less than a kilogram.

[5]Both the sankinsé and yoruba plates are used in Ouagadougou.

TABLE 5.2

SIZE OF TRANSACTION BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice
Kilo (3)	3 (1.7)	-	1 (1.1)	44 (19.8)
Tomato box (11)	2 (1.1)	3 (4.8)	-	-
Local plate (14)	5 (2.8)	-	7 (8.0)	1 (0.5)
Yoruba plate (15)	9 (5.0)	6 (9.5)	4 (4.5)	-
ORD tine (17)	22 (12.3)	26 (41.3)	10 (11.4)	6 (2.7)
50 kilogram sack (30)	9 (5.0)	3 (4.8)	17 (19.3)	96 (43.2)
100 kilogram sack (31)	128 (71.5)	24 (38.1)	47 (53.4)	68 (30.6)
Double pot (2 kg) (52)	-	1 (1.6)	1 (1.1)	-
60 kilogram sack (53)	1 (0.6)	-	1 (1.1)	4 (1.8)
90 kilogram sack (54)	-	-	-	3 (1.4)

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

The vendeuses, however, do sell in quantities as small as a ladle. Surely some of the sample members buy such small quantities, but it is most likely that grain for daily consumption is not bought that way.

5.2.3 Frequency of Grain Purchases

Grain is purchased as often as everyday and as rarely as once a year. Table 5.3 shows the frequency with which consumers said they purchased different grains.

For the sample as a whole, between 42 and 56% of grain purchases are made monthly. In Bobo-Dioulasso the percentages are somewhat higher, 54-70%; and in Ouagadougou, for white sorghum, corn, and rice, they are between 41 and 48%. Millet seems to be consumed less frequently in Ouagadougou and is therefore bought less often. Monthly purchases are particularly convenient for civil servants and private sector employees who receive a monthly paycheck. Many families buy less frequently than monthly, probably because their households are too small to consume an entire sack in a month.

Relatively few households buy white sorghum or millet on a daily basis in either city. Corn and rice, however, are bought daily by 9-16% of the sample households. This is probably because they are relatively more expensive. Rice is considered more like a luxury good by poorer households. Many of these households who say they buy daily do not actually buy everyday but rather buy just the amount they will need for the day they are serving those grains.

When purchases are made daily and in small quantities they are almost surely made by the woman in charge of cooking or by a young assistant. Larger, more infrequent purchases are probably negotiated by the head of the household or an older son.

5.2.4 Location of Purchases

Table 5.4 shows where consumers make their grain purchases. The preference for purchasing in local or central markets is consistent with the preference for buying from traders, who are usually located in or around those markets. It is interesting that so many consumers seem to go to the central market to buy their grain, even more so in Bobo-Dioulasso than in Ouagadougou. This difference is undoubtedly explained by Ouagadougou's expansive size.

TABLE 5.3

FREQUENCY OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Frequency of Purchase	White Sorghum	Millet	Corn	Rice
Daily (1)	10 (5.6)	3 (4.8)	8 (9.1)	29 (13.1)
Once every 2 weeks (2)	4 (2.2)	3 (4.8)	2 (2.3)	5 (2.3)
Once every 3 weeks (3)	7 (3.9)	1 (1.6)	4 (4.5)	8 (3.6)
Once a month (4)	97 (54.5)	27 (42.9)	41 (46.6)	124 (55.9)
Once every 1-2 months (5)	14 (7.9)	4 (6.4)	8 (9.1)	18 (8.1)
Once every 2 months (6)	18 (10.1)	3 (4.8)	7 (8.0)	15 (6.8)
Once every 3 months (7)	6 (3.4)	2 (3.2)	5 (5.7)	8 (3.6)
Once every 4 months (8)	2 (1.1)	2 (3.2)	1 (1.1)	4 (1.8)
Once every 2-3 months (9)	4 (2.2)	-	-	-
Once every 5-7 months (10)	1 (0.6)	2 (3.2)	2 (2.2)	1 (0.5)
Once every 10 months (14)	-	-	1 (1.1)	-
Once a year (15)	2 (1.1)	8 (12.7)	2 (2.3)	3 (1.4)
Once a week (17)	11 (6.2)	4 (6.3)	2 (2.3)	1 (0.5)
2-4 times a week (19)	2 (1.1)	3 (4.8)	4 (4.5)	4 (1.9)
Twice a month (26)	-	1 (1.6)	-	1 (0.5)
1-2 times per month (27)	-	-	-	1 (0.5)
Variable (23)	-	-	1 (1.1)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 5.4

LOCATION OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice
Rural market (1)	6 (3.4)	2 (3.2)	4 (4.5)	1 (0.5)
Local market (quarter) (2)	48 (26.8)	18 (28.6)	24 (27.2)	61 (27.5)
Central market (3)	71 (39.7)	33 (52.4)	22 (25.0)	81 (36.5)
Other markets or purchased through employer (4)	8 (4.5)	-	9 (10.2)	27 (12.2)
OFNACER or central market (5)	4 (2.2)	4 (6.3)	1 (1.1)	6 (2.7)
No response (6)	5 (2.8)	-	1 (1.1)	4 (2.0)
Local market or central market (12)	5 (2.8)	-	4 (4.5)	6 (2.7)
Rural market or central market (13)	1 (0.6)	-	-	-
Outside of the market (22)	1 (0.6)	-	-	-
OFNACER or local market (25)	2 (1.1)	-	1 (1.1)	3 (1.4)
Bought from OFNACER through the employer (87)	1 (0.6)	-	-	-
OFNACER (central) or FASO YAAR (140)	19 (10.6)	5 (7.9)	20 (22.7)	26 (11.8)
OFNACER (local) (141)	6 (3.4)	1 (1.6)	2 (2.2)	7 (3.2)
Other[a] (7)	2 (1.1)	-	-	-

NOTE: a) Military camp, employer, etc.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

These data also confirm the relative importance of OFNACER mentioned earlier. It is interesting to note that between 20 and 25% of those who purchase at OFNACER do not use the central warehouse.[6] This table also points out the fact that some consumers purchase grain through their employer. This is possible whether they work in the public or private sector. This was not as clear from the data in Table 5.1, perhaps because most of the grain purchased through an employer, regardless of the avenue, comes from OFNACER, so OFNACER is seen as the trading partner.

5.3 PURCHASING BEHAVIOR OF PREPARED FOOD SELLERS

Almost everyone eats some food which is not prepared in his home, from an entire meal purchased in a restaurant or a vendor along the side of the road or in a market, to a snack eaten at work or on the way home from school, to a calabash of beer at a local cabaret. The grains used in the preparation of these foods represent an important part of consumer demand for grain -- more so in urban than rural areas. These foods are prepared and sold by restaurants and individual vendors. Preparing the more traditional dishes is the domain of women.

The dishes sold by prepared food sellers include: rice and sauce, millet cakes, boules d'akassa, bouillie, donuts, dolo, and dégué. Most women prepare only one dish. Except for the beer brewers, the prepared food sellers in our sample buy mostly millet, rice, and wheat flour. Red sorghum is generally not used for cooking by urban consumers, except by the very poorest people (no one in the sample said they ate it). It is, however, used for preparing dolo. Some brewers sprout their own sorghum but many buy sorghum which is already sprouted.

As in the previous section, the tables included here refer to the entire sample. Appendix F contains tables which show the separate results for Ouagadougou and Bobo-Dioulasso. This section discusses different aspects of the buying behavior of prepared food sellers.

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[6]The percentage is much lower for purchases of corn. This is probably explained by the fact that not all warehouses have every grain at all times. The consumer must search for a warehouse that has what he wants.

5.3.1 Trading Partners

Table 5.5 shows the sellers from whom prepared food sellers buy their grain. With few exceptions, prepared food sellers purchase their grain from traders. Virtually all of them buy from small and medium-sized traders. The data for Bobo-Dioulasso indicate that a number of prepared food sellers buy from vendeuses. As explained earlier in Chapter 2, there are women who trade grain in the same way as the (male) small and medium traders. However, they are still referred to as vendeuses, simply because they are women. It is most likely that the prepared food sellers who say they buy from vendeuses, are not buying from the women who sell in very small quantities, but from female traders.

Neither OFNACER nor Faso Yaar are important channels for grain purchases by prepared food sellers. Similarly, almost none of them buy directly from producers.

5.3.2 Size of Transactions

Table 5.6 shows the unit in which the prepared food sellers say they buy grain. For those who prepared dishes using rice, 58% of the entire sample buys rice by the kilogram. In Ouagadougou, where it is possible to buy by the plate, 32% buy it by the kilogram, and 36% by the plate. In both cities a small percentage of the women buy a sack at a time, either 50 or 100 kg.

Preparers of millet seem to prefer to buy it in relatively small units; in Bobo-Dioulasso they buy it by using the tomato box, and in Ouagadougou by the plate. About 26% buy a tine at time, and even fewer, 5%, purchase an entire sack at a time.

There were relatively few beer brewers in our sample because they represent a small percentage of all prepared food sellers. They usually buy sprouted red sorghum, grain which has already gone through a first stage of processing. They buy in larger units, a medium basket, tine, or sack, because it does not pay to brew a small quantity. This explains why a majority buy a sack at a time.[7]

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[7]Beer brewing is the most lucrative of all food preparations. The reader is referred to Saul (1982) for an excellent discussion of all aspects of beer brewing.

TABLE 5.5

CHOICE OF SELLER BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice	Red Sorghum
Producer (1)	-	-	-	-	1 (14.3)
Vendeuse (2)	-	8 (14.0)	1 (20.0)	3 (6.0)	2 (28.6)
Small/Medium-sized Trader (3)	- -	25 (43.9)	2 (40.0)	32 (64.0)	1 (14.3)
Large Trader (4)	-	-	-	3 (6.0)	1 (14.3)
FASO YAAR (5)	-	-	-	1 (2.0)	-
Producer or Small/Medium-sized Trader (13)	-	-	-	-	1 (14.3)
No Particular Seller (14)	-	1 (1.8)	-	-	-
Vendeuse or Small/Medium-sized Trader (23)	1 (100.0)	22 (38.6)	2 (20.0)	5 (10.0)	-
Small/Medium or Large Trader (34)	-	1 (1.8)	-	3 (6.0)	1 (14.3)
Small/Medium Trader or OFNACER (36)	-	-	-	2 (4.0)	-
Large Trader or OFNACER (46)	-	-	-	1 (2.0)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 5.6

SIZE OF TRANSACTION BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice	Red Sorghum
Kilogram (3)	-	-	-	29 (58.0)	-
Small ladle (7)	-	2 (3.5)	-	-	-
Tomato box (11)	1 (100.0)	16 (28.1)	-	-	-
Local plate (14)	-	-	1 (20.0)	-	-
Yoruba plate (15)	-	21 (36.8)	4 (80.0)	8 (16.0)	-
ORD tine (17)	-	15 (26.3)	-	4 (8.0)	1 (14.3)
Medium basket (19)	-	-	-	-	1 (14.3)
50 kilogram sack (30)	-	-	-	6 (12.0)	-
100 kilogram sack (31)	-	3 (5.3)	-	3 (6.0)	4 (57.1)
Basin (61)	-	-	-	-	1 (14.3)

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

5.3.3 Frequency of Grain Purchases

Most women who prepare food to sell commercially do it everyday, or at least four times a week. The data in Table 5.7 show that most also buy grain daily, or as often as they prepare food. Part of the reason for the frequency with which they buy, and the small quantities, is that they often have revolving credit accounts with their sellers. Today's purchase is paid for with the proceeds from today's sales. The loan is paid either in the evening or the next morning when more grain is purchased.

Again, beer brewing is an exception. The brewing process takes three days, so most brewers prepare only twice a week.[8]

5.3.4 Location of Grain Purchases

Table 5.8 indicates that for all preparations but beer, local and central markets are the preferred locations for purchases. As was the case for consumers, local markets are favored in Ouagadougou.

Most beer brewers take delivery of their red sorghum at the compounds where they brew. This practice is more prevalent among the brewers in Ouagadougou.

5.4 INSTITUTIONAL GRAIN PURCHASERS

There are two other groups which purchase grain: institutions and industrial processors. The institutions include schools and military camps.[9] Industrial processors include the breweries (SOBIBRA and BRAKINA), VOLTAPAT, and the Grand Moulin de Burkina (GMB).

Primary schools prepare lunch, and secondary schools prepare lunch and often dinner. The primary schools usually receive corn flour for the luncheon meal from an NGO. Secondary schools use rice, corn flour, and

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[8]In Ouagadougou all the brewers interviewed were on a twice-a-week schedule.

[9]We were unable to obtain an interview with anyone from the military camps.

TABLE 5.7

FREQUENCY OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Entire Sample)

(% of column total in parentheses)

Frequency	White Sorghum	Millet	Corn	Rice	Red Sorghum
Once a week (6)	-	3 (5.3)	-	3 (6.0)	1 (14.3)
Twice a week (7)	-	4 (7.0)	-	5 (10.0)	5 (71.4)
Three times a week (8)	-	4 (7.0)	-	1 (2.0)	-
Four times a week (9)	-	2 (3.5)	-	5 (10.0)	1 (14.3)
Five times a week (10)	-	4 (7.0)	1 (20.0)	1 (2.0)	-
Six times a week (11)	-	3 (5.3)	-	2 (4.0)	-
Seven times a week (12)	1 (100.0)	36 (63.2)	4 (80.0)	32 (62.0)	-
Once a month (13)	-	1 (1.8)	-	1 (2.0)	-
Once every 2 months (14)	-	-	-	1 (2.0)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 5.8

LOCATION OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAIN
(Entire Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice	Red Sorghum
Local markets (quarter) (2)	1 (100.0)	27 (47.4)	4 (80.0)	33 (66.0)	1 (14.3)
Central markets (3)	-	17 (29.8)	1 (20.0)	12 (24.0)	2 (28.6)
Delivered to the compound (5)	-	2 (3.5)	-	-	4 (57.1)
Rural or central markets (13)	-	1 (1.8)	-	-	-
Local or central markets (23)	-	10 (17.5)	-	5 (10.0)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

pasta. Public schools, which are the financial responsibility of the Ministry of Education, receive some of their supplies from the Ministry. Rice (imported from Asia) is bought through Faso Yaar (SOVOLCOM). Corn flour generally comes from the World Food Program and NGOs like CATHWEL. Pasta is purchased directly from VOLTAPAT.

The breweries use rice and some local cereals for their beers. In years of good harvest they like to buy local cereals because it helps lower their production costs. They generally contract their purchases through large traders.

VOLTAPAT, which produces macaroni, uses mostly wheat in its processing. Some comes from the local production in the Sourou valley, but most is imported.

The GMB mills all kinds of grains: corn, white sorghum, red sorghum, and wheat. It imports some, especially wheat, but has the capacity to mill all kinds. In recent years it has operated grossly under capacity because of two problems. The generally bad harvests have raised prices so that grain is prohibitively expensive to purchase, and consumers seem to prefer to purchase unprocessed grain, rather than flour, processing only as much as they need at a particular time.[10]

All the industries interviewed are organized to buy grain on behalf of their employees. Some even offer up to four months of credit. In Bobo-Dioulasso they often buy through traders. In Ouagadougou and elsewhere they buy from OFNACER.

Unfortunately, we were unable to obtain quantitative data about institutional purchases -- either from the buyers or from the sellers.[11] Therefore, it is difficult to estimate their relative importance as a marketing channel.

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[10]This seemingly uneconomical practice is a self-imposed saving behavior. People seem to feel that the less they have, the less quickly they will use it up.

[11]OFNACER does not seem to keep records about the purchasers of its grain.

It would be safe to conclude, however, that most consumers receive some grain through an institution. The importance of institutions as a purchasing channel depends very much on the individual purchaser's situation. Members of the military probably receive a major portion of their grain this way. Families with school-age children purchase indirectly through that channel. Similarly, consumers who buy bottled beer or serve macaroni or bread have indirectly purchased through these channels. Based on the above, we conclude that the institutions serve mainly middle and lower middle class consumers.

5.5 CONCLUSIONS ABOUT CONSUMER PURCHASING BEHAVIOR

Whether to consumers directly, or to prepared food sellers, the most important channel for selling grain in urban areas is small and medium traders. The vendeuses, who also buy from these traders, supply less than 10% of the market. They are especially important for purchases of more luxury grains and especially for irregular and emergency purchases.

The grain markets are particularly active at the beginning of the month, just after salaried employees receive their paychecks. About 50% of consumers buy some grain by the sack on a monthly basis. A large proportion of prepared food sellers, because of their small capital base and the daily rhythm of their business, buy grain on a daily basis in smaller quantities (by the plate or tine). Not surprisingly, they also prefer to buy in local markets.

The use of OFNACER varies considerably according to the grain being bought. It is more popular for corn and rice, especially in Ouagadougou, where these grains are more expensive and less readily available. It is difficult from our numerical data to determine which types of consumers avail themselves of OFNACER's services. During the interviews, however, many of the poorest consumers said they are unable to use OFNACER because they do not have the proper papers (carte de famille), and more importantly because they cannot buy a large quantity of grain all at once. The lack of available credit, and the general perception that the purchasing procedure is complicated, are other important reasons given by poorer families for not purchasing from OFNACER. Wealthier families cite

the poorer quality of the grain and the inconvenience as their reasons for not buying from OFNACER. Thus, we conclude that it is mostly the middle to lower middle income families who buy from OFNACER.

CHAPTER 6

CONCLUSIONS AND POLICY OPTIONS

An important reason for undertaking this study was to give policymakers a better picture of the strengths and weaknesses of the private sector grain market for use in formulating policies which affect food production and marketing. This chapter reviews the results of the study and draws conclusions about the performance of specific components of the cereal marketing system in Burkina Faso. A final section considers policy options for improving the system.

The section on policy options begins with a discussion of the policy objectives of the Government of Burkina Faso (GOBF). Despite changes in terminology and ideological context, there has been more continuity than change in government policy regarding agricultural marketing under the six governments which have ruled the country since independence. The key element is the belief that national objectives and the interests of both producers and consumers can be effectively served through state intervention in marketing. Specifically, this has entailed an attempt to maintain some control over producer and consumer prices via state trading activities throughout the country. Private sector marketing has, at best, been tolerated. More commonly, governments have regarded private marketing activities with mistrust; they have operated on the belief that activities of traders work against the interests of national food security and the public at large.

The policy options section reviews various possibilities for meeting the objectives of the government including adherence to the current policy. This is followed by a discussion of constraints, primarily revealed by the record of government cereal marketing efforts since the early 1970s. Finally, the last section presents specific recommendations aimed at improving the functioning of the marketing system. Special emphasis is given to measures which do not require major commitments of government resources since limited administrative, managerial and financial resources will continue to be the most binding constraint on any policy measure.

6.1 RESULTS AND CONCLUSIONS

The preceding chapters analyzed the various components of the marketing system: the behavior of markets, traders, producers and consumers. This section reviews the results presented earlier and integrates them to draw conclusions about the effect of the different components on the functioning of the system.

The market for grain operates within a continuously changing production environment. Although grain is produced throughout the country, during the past eight years only the southwestern regions (Volta Noire, Hauts-Bassins/Comoe and Bougouriba) have regularly produced enough grain to meet their own consumption needs. Annual surpluses from those areas, however, are not sufficient to balance the yearly deficits in the rest of the country. Current trends in production, technology, weather and population growth indicate that in the foreseeable future Burkina Faso is likely to continue to experience annual grain deficits.

While the potential for self-sufficiency exists, as concluded in the CRED 1977 study, Burkina Faso has continued to experience annual food grain deficits. Without a significant technological breakthrough, there is no reason to think that this condition will change in the near future. In formulating grain production and marketing policy, it is essential to recognize this reality. Hence, current policy must be based on expectations of a chronic deficit.

6.1.1 Production Patterns

During the past ten to twenty years, production patterns have changed. Northern and central regions, which were once self-sufficient or even produced a surplus, are now chronically in deficit. This has led to changes in the pattern of marketing flows. Presently the two main axes for grain movements are:

- from Bobo-Dioulasso and the Volta Noire to the Yatenga;
- from the Volta Noire to Ouagadougou and then north to Kaya, Dori, and the Yatenga.

Even within deficit regions there are pockets of surplus production. This grain, rather than circulating within the region to deficit areas,

is usually drawn out of the area by national and regional traders involved in inter-regional exchanges. Cereal banks in deficit regions are an attempt to counter this. In recent years there has been a trend to import grain from neighboring countries to the south. Both the private and public sectors are directly involved in the grain trade.

6.1.2 Private Sector Trade

The broad range of private sector market participants can be categorized by: i) the size of their capital base, ii) the geographical range of their operations, iii) the length of time they store grain, iv) what type of exchange points they operate, and v) how they are remunerated. In the course of travelling from producer to consumer, grain may pass through the hands of several of these intermediaries.

The private sector has two basic types of marketing chains:

- a chain that is financed entirely by one trader's capital;
- a chain where intermediaries negotiate spot agreements every time grain changes hands.

Grain is collected from producers both in marketplaces and outside them. In the latter, likely locations for grain collection are in the villages, along the road to market, or at a crossroads. In any particular area the predominant method depends on the importance of marketplaces as exchange points, the condition of the roads, and the amount of marketed surplus.

Producers in heavily surplus areas usually have several marketing options: selling to a buyer resident in the village or one close by; selling to the village group; or going to the market and choosing among a variety of buyers in and near the market. The producer's choice depends on the amount of grain being sold, his own means of transport, the amount of time he has, and the terms offered by different buyers. When buying from producers, intermediaries compete through price and other services they can offer (such as credit, availability of grain in the future, proximity and transport).

Among the more important, larger traders there is intense competition to buy grain from intermediaries as well as from producers. This is

particularly true in a short-crop year, because the trader is virtually certain to be able to sell as much as he can buy.

In deficit or marginally surplus areas, generally there are fewer sales choices for producers. Competition for buying grain in these regions is considerably less intense.

In these areas with a smaller (and more irregular) marketed surplus, the competition to buy from intermediaries is stronger than for buying directly from producers. Regional or national traders would prefer to let local traders take care of the collection operation. This is particularly true where markets meet more frequently and in more remote areas. These are also the areas, of course, where the village resident buyer system is well developed.

In areas of high effective demand (e.g. urban and semi-urban areas, and marginally deficit regions), there is intense competition for consumers' money. By contrast, in rural areas of the Yatenga or Sahel, potential demand for grain exists, but the means for purchasing it is lacking. Merchants prefer not to trade in grain because they are often asked to sell grain on credit, which for social reasons is difficult to refuse, while the risk of default is very high.

6.1.3 Price Collusion

Effective price collusion results in identical producer prices being paid by intermediaries buying in the same region. When intensive price competition exists, identical prices also result -- but they are at a higher level. As a result, it is not possible when studying the price series to distinguish between the effects of the two phenomena. For the producer, the existence of collusive price agreements dampens the positive price effects of intense competition and focuses the competition on nonprice factors. This potentially weakens the supply response which might result if competition bid up prices. However, from the rapid reconnaissance studies, it is clear that in surplus areas where traders from more than one deficit region are buying, producers do benefit by receiving higher prices.

The more intense the competition, the more likely it is that collusive agreements break down. In fact, traders in Bobo-Dioulasso indicated that in recent years their agreements have not been effective

for just that reason. Thus, as shortages have occurred, producers have probably been paid fairly well for their produce. It remains to be seen whether in a good year these gains will be eroded. This is probable.

6.1.4 Public Sector Trade

Public sector marketing is handled by OFNACER. The producer prices applied by the parastatal are announced in October and consumer prices are announced in March. OFNACER buys from village groups, from traders, and directly from producers. In the last few years there has been a tendency to favor purchasing through village groups. In years when the harvest is particularly bad, OFNACER is able to buy very little at official prices. After the official buying campaign ends, it often contracts with private traders to provide additional grain, purchasing it at a higher price.

In surplus areas where village groups actively buy on behalf of OFNACER, they are an important force in the market as long as they continue to buy. When the competition for grain is particularly intense, they are often approached by traders who offer to buy grain from them at a price higher than OFNACER's and pay them in cash immediately. It would not be surprising in the future to see village groups negotiate contracts with traders. Cereal banks and village groups from deficit regions are already establishing ties with village groups in surplus areas.

OFNACER sales are strongest in major urban areas. Its rural sales are greatest in chronically deficit areas. But even in these areas, it is not necessarily the poorest who benefit from OFNACER's subsidized prices. Our consumer behavior studies reveal that 10-20% of the sample, the poorest group of consumers, regularly buys in quantities of less than one tine. Since OFNACER does not sell in such small amounts, these consumers cannot benefit from the subsidized price.

The difference between a low official price and a high market price has led to two creative private market practices. Because certain public sector employees (e.g. members of the military) may obtain OFNACER grain on credit, traders in both Bobo-Dioulasso and Ouagadougou buy that same grain from the employee for 500 FCFA less than the official purchase price. This gives the employee cash while the trader gets grain at bargain prices to resell at market prices. There are also traders who

manage to buy directly from OFNACER grain which of course they resell at market prices.

There is much criticism of OFNACER for operating inefficiently and serving the needs of government employees rather than poor farmers and urban dwellers. Similarly, there is criticism of the fact that OFNACER runs considerable deficits. Given their contradictory mandate to serve both producers and consumers, they could not hope to do otherwise.

In reality, and ironically, the principal beneficiaries of OFNACER's operations include the more privileged consumers (notably civil servants and military personnel), the better functioning cereal banks, and traders who deal with OFNACER. The latter tend to be the larger, more well-to-do traders, some of whom deal in grain only when they get a lucrative contract from OFNACER. Producers selling small amounts of grain irregularly and in isolated areas may be actually disadvantaged by current OFNACER operations, particularly in conditions of rising prices. Traders make reference to the OFNACER producer buying price as if it were a price ceiling that must be observed even when supply/demand conditions dictate a higher price.

Government regulations such as restricting inter-regional trade and enforcing the nationwide uniform official prices for the private sector trade clearly inhibit the private sector from redistributing supplies efficiently and at lowest cost. These restrictions increase the cost of grain to everyone, and tend to increase profits for traders who continue to operate.

It is clear from our analysis and field observations that there are remote areas which are not well served by private traders (for reasons discussed above). Government restrictions on trade also contribute to this. They are, however, by no means the major cause. Direct government intervention to serve these zones will necessarily take considerable resources. Meeting the needs of poor people in both rural and urban areas will do likewise.

6.1.5 Market Competitiveness, Integration, Margins, and Seasonality

While in many ways the marketing system is quite competitive, particularly at each individual level of trade, a large number of wealthy traders are an important force in the market because of the large amounts

of capital they control. These traders have a competitive edge in all aspects of trade.

Analysis of prices suggests that, in general, prices both within and between regions are highly correlated, indicating that price signals are communicated within circumscribed areas, better in surplus than in deficit regions. Between regions, the results are somewhat mixed. Markets along routes where transport costs are higher are less well integrated. Similarly, when trade flows between regions are thin, the markets are generally not well integrated. Unfortunately, there are no price series for some of the more remote areas. Intuition suggests that while prices within a remote region would probably be integrated, they would be less well integrated with prices of distant markets with which they trade.

Seasonal price fluctuations are consistent with traders' storage costs, except in the heaviest producing region, the Volta Noire.

The analysis of marketing margins and return on capital show wide seasonal fluctuations along the different routes. Traders who purchase in supply regions earn hefty profits in the post-harvest season. Traders bringing grain to the deficit Sahel earn high profit margins in the soudure. Because of the difficulty in estimating margins, and accurately assessing cost, it is difficult to draw broad conclusions about whether traders might earn excess profits and along which routes.

Finally, changes over time indicate that because of declining production, markets have become more competitive and integrated than they were ten or twenty years ago. This seems to be the result of increased pressure on the market to redistribute increasingly insufficient supplies.

6.1.6 Producer Marketing Behavior

The results of the producer studies show a wide variation in marketing behavior. Although the average percent of crop sold was about 17% for all five villages, there was a huge variation between the surplus villages, where farmers sold about 21% of their grain harvest, and the deficit villages, where they sold about 3%. The size of the grain harvest is the only variable which is consistently significant in explaining the variation in marketed surplus.

The contrast between deficit and surplus villages is yet sharper when considering net sales. In the deficit villages net sales are strongly

negative -- on average farmers buy more than they sell. The degree of participation in the grain market by individual households also varies significantly between surplus and deficit villages. In surplus villages a very high percent of household (84% of the sample) sold grain. A very low percent (12% of the sample) sold in the extreme deficit villages. And in the intermediate village a more moderate percent (60%) of the sample sold grain.

The conventional wisdom about the seasonality of producer sales and purchases is that households sell in the low price periods and buy in the high price periods. The results of our study suggest that in general sales are more evenly distributed during the year than is typically thought. Although sales are greater in the post-harvest period and purchases greater in the pre-harvest period, the pattern is not extreme. The variation in seasonal sales patterns between deficit and surplus villages indicates that the surplus village seems to suffer least from the seasonality of grain prices.

As with marketed surplus, there is a great deal of variation in seasonal marketing patterns. A small group of wealthier households had a sales pattern that took advantage of seasonal price increases -- these households sold significantly more than the average. A larger group of households, who are considerably poorer, seem to be taking a loss because of seasonal price increases -- they make most of their sales in the six months after harvest, and most of their purchases in the subsequent six months.

Two other groups of households have marketing patterns which do not imply significant gains or losses due to seasonal price movement. The first group has very little interaction with the grain market. The second group, which comprises slightly more than half the sample, avoided buying or selling significant quantities in the very low or very high price periods.

A final result, which helps put these marketing patterns in some overall perspective, is that for the sample as a whole, sales of grain and other crops are only one third of all cash receipts for the household. In deficit villages nonmarket transfers of grain were greater than grain sales, but far less than purchases.

6.1.7 Urban Consumer Marketing Behavior

There is very wide variation in purchasing behavior of urban consumers, for both individual households and prepared food-sellers. Although the quantitative data are not available, qualitative data indicate that purchasing patterns for households depend very much on socio-economic status. In general, consumers in both Ouagadougou and Bobo-Dioulasso purchase from private traders. Credit, the availability of grain, convenience of location and grain quality are the reasons given. They seem to deal more often with small and medium sized traders, who are located either in central or local markets. They prefer to buy in quantities of one tine to one sack at a time, depending upon the grain. About half the sample of households buys grain once a month.

For prepared food-sellers the frequency of preparation and the type of dish combined with capitalization of the enterprise seem to determine purchasing behavior. Most prepared food-sellers purchase grain every day. They generally buy in small quantities in their local market. Beer brewers, who generally have more capital, and whose preparation requires larger quantities, have very different purchasing habits. They generally by several sacks at a time twice a week and take delivery from traders in their compounds, where they do the brewing.

The qualitative data seem to indicate that in urban areas mostly middle and lower middle income consumers purchase from OFNACER. OFNACER is more popular as a source for corn and rice than for millet and sorghum, especially in Ouagadougou.

6.1.8 Conclusions

- Markets seem to work well in surplus regions. Producers have a variety of sales outlets. Price signals are transmitted and responded to, and competition is intense.

- Markets work less well in deficit regions. Fewer traders buy in these areas. When demand is high enough it attracts traders, but trading in these areas is a riskier operation. Although the distribution system is good, backflows into these areas, especially during the hungry, rainy season, are a particular problem.

- Seasonal price fluctuations which result from the annual cycle of agricultural supply and demand are not excessive. There is no reason to suspect excess returns to trader storage in most regions.

- The return on capital for trading grain from supply regions in the post-harvest season indicates that there is further room for competition in an already competitive market area. Similarly, there is a need for more competition in trade to deficit regions like the Yatenga and the Sahel.

- The availability and cost of transport have an important effect both on the price of grain and on how well the marketing system functions. Improved roads and increased credit for investing in transport would help alleviate this problem.

- Private sector traders develop ways to participate in public sector marketing activities and take advantage of them where possible. This is not always bad.

- Private traders often provide services which are not easily available elsewhere (e.g., consumer credit to public employees, credit for purchasing grain, availability of grain, the possibility of purchasing small quantities, etc.).

- There is reason, however, to question whether the public sector activities are reaching all segments of the population -- especially those most in need. Poor people in both urban and rural areas are the least able to take advantage of marketing choices. Policies which are aimed at the middle class will not reach the poor. Programs must be designed and targeted specifically for the poor. This will require very decentralized grass roots efforts.

- Village-group cereal banks operate differently in different types of regions. Cereal banks are most developed in deficit regions and show potential for resolving the backflow problem. In surplus regions, where the need is less, village groups buy on behalf of OFNACER and generally do not trade on their own account. In those regions, village groups get more involved in the provision of social services. They build schools and village hospitals and run village pharmacies.

- It should be clear both from the description of producer and consumer marketing activities and from the analysis of competition that the interests of producers and consumers are diametrically opposed. Therefore, any policy aimed at serving the needs of both, at the same time, is bound to do neither particularly well. Such is the case of the consumer and producer price policies which OFNACER is asked to implement.

- In rural areas OFNACER serves the needs of the poor mostly through the distribution of food aid. Urban consumers who benefit from OFNACER are in the middle and lower middle classes. Retailing operations in cities make it difficult for poorer consumers to take advantage of it.

6.2 POLICY OPTIONS FOR IMPROVING THE MARKETING SYSTEM

To develop appropriate policy measures for improving the grain marketing system, we must consider the broad goals of policy, the constraints on policy, and alternative institutional arrangements for implementing potential measures. This section begins with a discussion of our understanding of the Government of Burkina Faso's policy objectives and constraints. Taking these into account, we suggest specific measures which would singly or in combination improve the marketing system for grains in light of existing policy objectives.

6.2.1 Policy Objectives

We have identified five basic objectives which the Government of Burkina Faso considers important and which are affected by the grain marketing system. Obviously, they are interrelated.

- Sufficient quantities of grain available year-round throughout the country at a reasonable price. Achieving this goal requires that adequate quantities of grain be in Burkina Faso either through local production or by importing. The grain must then be redistributed at reasonable cost from surplus to deficit regions and from points of entry to consumption centers.

- Market outlets for producers at renumerative prices throughout the year. If farmers cannot sell their grain at remunerative prices, they will produce only enough for their subsistence needs and none for the market. Because of a generally positive supply response by farmers, achieving this objective should help achieve the first one.

- Increased food security leading eventually to national self-sufficiency in basic staple foods. At present Burkina Faso has not attained Haggblade's definition of food security: "the ability to assure a nutritionally adequate level of food consumption to all segments of a country's population" (Haggblade, 1984, p.1). This does not imply that Burkina Faso should necessarily produce all the food needed to meet those requirements. This objeccive is somewhat broader than the previous two, because it incorporates other foods in addition to grain.

- Adequate income for all residents. In a country where 92% of the population is rural, this objective implies that farmers must be paid remuneratively for their crops. They must have

sources of income adequate to invest in farming and to purchase food when their production does not meet their consumption requirements.

It should be obvious that these four objectives not only are interrelated but are without ideolcgical bias. We believe that these objectives are no different from those of most governments throughout the world.

A fifth object has more of an ideological component.

- Equity within and between regions. Regions within Burkina Faso are differently endowed with natural resources. The CNR government wants to aim policy specifically at evening out the distribution of resources.

6.2.2 Strategies and Constraints

Food policy objectives are being pursued through two parallel and in theory complimentary strategies involving increases in food production and improvements in the efficiency of the marketing system. Increasing food production at a rate in excess of population growth is clearly the key to achieving virtually all the policy objectives.

Since independence Burkina Faso has moved from a situation of self-sufficiency in basic foodstuffs (in the 1950s and early 1960s) to an increasing inability to feed itself. In 1971 food imports were about 26,500 metric tons (2.7% of grain needs); in 1981 they were over 100,000 tons (about 11% of grain needs).[1] In a given year food aid makes up 25-50% of imports. Even after imports, in all but one of the past 13 years the amount of food available has been insufficient to feed the population at minimum nutritional standards. The annual deficit, after imports, has been as high as 15%.

The declining trend in per capita food production is having profound effects upon the national marketing system. It seriously complicates and even confounds government efforts to improve the effectiveness of the parastatal marketing system.

First, regional and national shortages of food, particularly in the urban areas, produce calls for government action. Short supplies are normally accompanied by rising prices. In many minds high prices are

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[1]More recent figures were unavailable.

primarily a result of hoarding by profiteers and price manipulation by grain traders in general. Government efforts to deal with these problems have taken the form of controlling prices and restricting grain movements. These and other measures have been largely ineffective. They aggravate the situation by further disrupting normal marketing channels and increasing the cost of trading.

Second, rural areas chronically in food deficit are becoming increasingly widespread. The demand for cereals in these rural areas is scattered and often seasonal, in contrast to the constant and more concentrated demand in major urban areas. The rural deficit zones present special problems since they are often relatively costly to service effectively.

Third, deficits are contributing to growing disparities in regional income distribution. The relatively well-endowed southwestern portion of the country has ready markets for its surplus cereal production while the chronically deficit areas of Yatenga and Sahel experience seasonal and permanent out-migration.

Finally, there is the growing dependence on food imports and food aid. This dependence works against the goal of national self-sufficiency and increases the importance of public sector marketing channels, donor agencies, as well as OFNACER. Currrently, food aid is the only element in the government's arsenal of activities which is effectively in harmony with its policy objectives. Specifically, food aid greatly enhances the government's ability to respond to local shortages and reduce regional income disparities while increasing its popularity. Despite official pronouncements favoring self-reliance and national self-sufficiency, food aid has attractive features which strengthen the vested interests of government and donor agencies alike.

A discussion of the mediocre performance of efforts to promote food production in Burkina Faso is beyond the scope of this report and would repeat what has been analyzed in detail elsewhere. In the absence of significant increases in agricultural productivity, Burkina Faso's ability to supply its food needs will continue to diminish. Despite the commendable efforts of various organizations such as Catholic Relief Services, Save the Children, and Se Servir de la Saison Sèche en Savanne et au Sahel (6S) to increase income-generating activities other than

staple food production, rural incomes and welfare will continue to depend for many years to come on rainfed agriculture in general and cereal production in particular.

Our research results strongly suggest that the private sector marketing system will compliment rather than constrain any increases in food production and productivity. New marketing efficiencies will be a help rather than a hindrance. The growth of food deficits and the decline of per capita food production have had a positive effect upon the level and intensity of competition in surplus-producing areas. Buyers compete more actively with one another for available suppplies, and collusive price agreements among traders have broken down in many instances as a consequence.

It is important to understand that these improvements in market efficiency are a result of supply and demand conditions, and cannot be attributed to government intervention in the grain trade. While it is true that growing food deficits have complicated government efforts to improve the efficiency of the parastatal marketing system, it is difficult to conclude that the government's strategy has worked. There is a strong temptation to assume that OFNACER's problems can be remedied by changes in practices and improvements in management. This assumption underlies continued support from USAID and other donors. Nonetheless, efforts to improve the functioning of public sector marketing significantly will probably continue to fail unless the conflict in objectives is specifically addressed.

- Policy Constraints

Evidence continues to mount in Burkina Faso and neighboring countries that constraints to effective food policies are particularly binding.

In designing marketing policies, the government must consider the following:

1. Limited financial resources.

2. Limited managerial and administrative capacity (which are both overcommitted by a large factor).

3. The need to generate government revenues.

4. The need to calm regional rivalries.

5. The need to obtain food for the army.

6. The political imperative of an ability to respond to short-term crises: for example, the need to distribute emergency food aid.

7. The fact that bureaucracies are inherently inflexible. They operate best when judgment and discretion are unnecessary. They must work automatically if they are to have:

   a. low levels of abuse;
   b. simple managerial requirements; and
   c. processes which are insulated from the whims of political leadership.

8. The information necessary to fine-tune decisions.

OFNACER's problems are, in a large part, related to the binding nature of these constraints. OFNACER requires major infusions of scarce resources: funds, and skilled administrative and managerial personnel. At the same time OFNACER lacks the independence and flexibility to operate without major losses.

In contrast to the experience with OFNACER, government and donor agencies' efforts to improve the marketing system through greater participation by village groups have met with some success. Specifically, cereal banks have been promoted as a means of providing a ready market for both sellers and buyers at the village level. Assessments of the cereal bank program have given it mixed ratings (Kat, Diop, Dolidon, Kaffane, and Roche). Major problems include poor management and overextension of credit.

These problems notwithstanding, marketing through village groups offers a more promising strategy than direct public sector involvement via OFNACER. Greater village group participation appears consistent with government policies and the goals of the August 1983 revolution. Equally important, the constraints discussed above are less binding for local organizations than for OFNACER. Village groups make fewer claims on government resources, finances and manpower, and are less encumbered by bureaucratic rigidities and short-term political considerations. Village groups are not a panacea for marketing problems in rural areas as their mixed performance to date has shown. However, they do offer scope for

positive action, albeit limited, where viable strategy options are very few. Specific measures suggested for village groups are included in the following section.

Aside from promoting village groups, there has been little effort by government and donor agencies to improve the private sector marketing system. As noted earlier, government policy has been characterized by both a mistrust of the private sector and a belief in the inherent superiority of large state-run operations to act effectively in the public interest. Given the constraints, however, improvements in the performance of the private sector may represent one of the few viable policy options. The trader community represents a critical mass of managerial and entrepreneural capacity which is one of Burkina Faso's scarcest resources.

In a new policy environment the private interests of the trader community can work in harmony with major policy objectives. Measures such as providing additional credit and market information to traders, while in themselves unlikely to have a major positive impact on the marketing system in the short term, can facilitate the healthy development of the private sector in a direction which is generally consistent with government objectives. Similarly, eliminating restrictions on trade and sending clear and consistent signals about the government's interest in promoting private trade would improve the business climate and lower the risks and costs of trade. Since there are indications that the market responds to government policy and that prices and other signals do get communicated relatively effectively through the marketing system, eventually positive improvements will be noticeable.

Implicit in improvement of private sector marketing is an altered role for OFNACER. There remains a set of activities which a public sector agency or an NGO can pursue and for which few other options exist at present. These include distribution of food aid, maintaining emergency food stocks, conducting research, and monitoring the marketing system on behalf of policymakers and the public at large. OFNACER may not have a comparative advantage in carrying out all these functions, but there appears to be a strong positive role that this organization can play, given its capacity and experience.

6.2.3 Specific Policy Measures

Based on the preceding conclusions and taking into consideration government objectives and constraints, we offer the following suggestions for specific policy measures which would improve the functioning of the marketing system. We searched the literature to find recommendations which had been made for countries with similar marketing problems. Unfortunately, rather than providing concrete implementation plans, most of the literature is either critical of government involvement in grain marketing systems or explains why state organizations should not become involved.[2]

We feel that the government must formally recognize the importance of the private sector in the grain market. Policies should encourage private sector participation and work to discontinue the heretofore adversarial nature of the relationship between the public and private sector marketing efforts.

Specific policy should be directed in five major areas: (1) clarifing OFNACER's mandate; (2) promoting private sector trade; (3) developing support services necessary for an efficient grain marketing system; (4) supporting local institutions which are involved in food grain marketing; and (5) building the capacity within the GOBF to analyze the food security situation and to take appropriate action.

It is necessary to:

1. Clarify OFNACER's mandate and redefine its role:

   - Target food aid in particular and OFNACER services in general upon the most needy section of the population;

2. Promote private sector trading activities:

   - Do not restrict internal movement of products;
   - Do not enforce official prices on private sector transactions;

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[2]In essence these sources speak to the rationale and strategies for government participation in grain marketing schemes. They question the foundation of government policy itself. The underlying assumption is that if countries cannot get their policies right, there is little hope for specific project intervention in the marketing sector.

3. Develop support services necessary for an efficient grain marketing system:

   - Improve and maintain roads;
   - Improve market information;
   - Find ways to increase the availability of short-term credit to producers;

4. Support local institutions which are involved in food grain marketing:

   - Promote village group activities in the area of food grain marketing;

5. Build government capacity to analyze the food security situation and to take appropriate action:

   - Improve the quality and quantity of research and the monitoring of the marketing system.

6.2.3.1 OFNACER's Mandate

The conflicting objectives of increasing prices to producers and providing low-priced grain to consumers is a "no-win" situation for the government. With available resources OFNACER's budget will always be squeezed unless it targets its direct intervention more narrowly.

The government should explicitly acknowledge that OFNACER's main strength is the wholesale distribution of cereals. Purchases should be limited to areas of large surplus. OFNACER is also a logical agency to receive and supervise the distribution of food aid.

Retail activities should be limited. Developing relationships between cereal banks and OFNACER should be explored. Cereal banks could be given funds to purchase on OFNACER's account in those areas where they are now located. In deficit regions OFNACER should wholesale to cereal banks, who in turn would retail to rural consumers. This would increase the distribution of OFNACER's supply in the deficit areas and give cereal banks a source of stable supply.[3]

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[3]Although cereal banks have been criticized as "foreign" institutions, there are many that function well. It would be foolish to abandon them entirely. With proper managerial training, they can be developed into a valuable resource for villagers. A rethinking of the appropriate strategy may be in order.

By working directly with the cereal banks, OFNACER can take advantage of these emerging local institutions. At the same time OFNACER should make a commitment to those banks with which it chooses to work in order to assist in training to improve their administrative capacities.

6.2.3.2 Promote Private Sector Trade

As long as the economy in Burkina Faso is a mixture between private and public sector trading activities, the private sector will continue to adapt to government restrictions. The restrictions, however, always increase the cost of private trading, a cost which of course is passed on to producers and consumers. Instead of trying to restrict private sector trade, the government should promote it and actively intervene only in ways which complement private trade, in order to correct inequities, or to provide services which the private sector does not.

We strongly suggest that there be no restriction on shipments of foodstuffs within the country (or to and from neighboring countries). If traders perceive that they will not be harrassed for shipping grain on the major roads, they can be expected to do so increasingly.

Official prices should be enforced only for OFNACER transactions. If traders do not feel the threat that their stocks may be confiscated, or that they will be forced to sell at official prices, they will trade more freely. More grain is likely to reach deficit areas, and more grain will stay in those regions where it is needed during the soudure.

6.2.3.3 Market Support Services

- Road Conditions

The road connections between certain producing and consuming regions need to be improved in order to reduce transportation costs. Routes that entail particularly high costs seem to be Dédougou/Yatenga; Ouagadougou/Dori and beyond; and Gaoua/Ouagadougou. The eastern region would be a source of grain for the Sahel and Kaya regions if road connections were better. At present, grain from the region must go first to Ouagadougou. Improving roads into the east would surely open up that area.

Unfortunately, these are high-cost investments. Because of the "public good" nature of roads, it falls to the government to improve

them. The high percentage of market prices taken by transport costs indicates that road improvements would have a direct effect on consumer prices.

- Market Information Services

Market research and information services should be improved at the national level. The research service may assist in identifying local problem areas of the type explained above, but its major clients will be policy makers, public agencies (OFNACER, DEP), and food aid donors.

To facilitate trade, one approach that might be attempted on a trial basis would be to link major markets, including rural markets, with radio transmitters. Market information gathered from this network could be broadcast at regular intervals on national radio. The network might also allow traders to send instructions to their agents for an appropriate fee. The fee would have to be high enough to discourage people from using it for purely personal communications. All communications would go through radio operators and be written down. The service should largely pay for itself.

6.2.3.4 Local Institutions

We propose assisting local village groups in a number of ways, some of which are discussed in detail below. It is unlikely that all suggestions will be appropriate and feasible for village groups to implement "en masse." Care must be taken to select the measures which reflect both the needs of an area and the capabilities of the village group in question. With regard to local needs, producers in the Volta Noire, for example, may have adequate outlets for their surplus grain production and may not need more village group involvement in marketing and storage. Conversely, in deficit rural areas in the Yatenga (e.g., Mené and Bougouré), there appears to be considerable scope for village group activity to handle backflows of grain to villages.

The capacity of individual village groups to assume a larger role is a second critical criterion. Expectations of village groups have been unrealistic in light of their general capabilities and stage of development. Training and advisory assistance to village groups generally has been inadequate and sometimes inappropriate. Only the more mature village groups with proven managerial skills should consider

undertaking marketing activities. Government agencies and NGOs may assist these village groups in identifying marketing areas where there is good scope for improvement. If they find that any of the following conditions exist, participation by village groups may be particularly fruitful:

1. Large numbers of farmers in an area routinely sell grain at harvest. These same farmers and others in the same area buy grain later in the year at significantly higher prices. Seasonal price increases routinely exceed storage costs.

2. Price differentials between a local market or exchange point and the nearest major urban market routinely exceed transport costs by a large margin.

3. Rural consumers rarely know what prices are in adjoining markets.

4. Collusive actions against the interests of producers are manifested in excessive inter-market or intra-seasonal price differentials.

5. Farmers frequently have difficulty finding buyers for surplus grain or sellers of grain when they have a deficit.

6. Transport is expensive and scarce.

Village groups with less experience might undertake related activities which entail little financial exposure or risk. Activities should contribute to gradual growth of the individual village group, and not overburden it, which often leads to failure and discredit in the eyes of its members.

For instance, local village groups and CDRs might link with one another to provide market information on prices and outlets in the vicinity. Villagers wishing to buy or sell could inquire from these groups before making a decision on where and how to buy or sell. These local market information groups/services might be linked into a national or regional network. OFNACER or the ORD might provide training on local market information services for village groups.

Concentrated efforts to improve village group management (such as those successfully undertaken by 6S and Partnership for Productivity) are highly complementary to, even a prerequisite for, measures to improve

marketing services. Specific skills which are needed include accounting, inventory control, information services, supervision of employees, decision making, delegation of authority, and relations with government and NGO agencies with whom the village group must deal.

6.2.3.5 Analytic Capacity

Policies and projects concerned with agricultural marketing in Africa are often conceived and implemented without the benefit of an understanding of how the existing marketing system functions. Many countries suffer from a dearth of information on the private marketing system. The problem is compounded when official policy acts to restrict or abolish private sector trade.[4]

Burkina Faso is in a better position than most by virtue of a series of studies over the past five years on cereals marketing in various parts of the country (i.e., Ouédraogo, 1983; Sanhoudi, 1980; Sherman, 1984; and Saul, 1982). This study builds upon these efforts and is intended to provide a more comprehensive picture of cereals marketing throughout Burkina Faso. These studies notwithstanding, there remain major gaps in our understanding of private sector marketing. The absence of good price series data on prices and quantities and a virtual dearth of statistics on movements of grain, make it difficult to be definitive on such key issues as the efficiency of the marketing system in allocating supplies over time and space. As a result, studies to date are more illustrative and indicative than definitive in nature. Concentrated efforts to study the operations of the system over a short period of time (1-2 years) are greatly impeded by the absence of good time series -- nor are these studies a substitute for such statistical series.

Efforts at collecting prices in Burkina Faso have been spasmodic, poorly supervised and even more poorly utilized (in part because of the questionable quality of the data). At the present time prices are

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[4]See study by Peter Temu on maize marketing in Kenya and Tanzania as an example of the difficulties, but not the impossibility, of doing research on marketing under conditions of restriction/suppression.

supposedly collected by OFNACER agents throughout the country.[5] There are obvious problems with having OFNACER responsibile for such a task. For limited periods of time, ORDs also collect prices, as have various specific research projects. To our knowledge, no systematic attempt has been made to analyze these data. (See Appendix G for an explanation of existing price data.) There are also major problems with the ways in which these prices are collected. If the prices are to be useful for specific types of analysis, such as computing price correlations to examine market integration, or estimating margins, the prices must be comparable. The way prices are currently collected, they are difficult to use for any of these types of analysis.

- Improved Decision Making

One of the challenges facing a market research effort is to present results to decision makers in a fashion that can be easily understood and in which they can have confidence. Decision makers usually only turn their attention to food marketing in times of crisis, when supplies are short and/or prices are high. A regular dialogue between decision makers and staff responsible for collection and analysis of market data would lead to a mutual understanding and common language which would improve the decision making process.

One or more seminars/workshops should be organized for decision makers on the subject of "Improving Food Policy Decision Making." The major focus would be upon the information needed to make good decisions: where it comes from, and how it is collected, analyzed, and provided to decision makers. The workshop should also cover the pivotal role of the decision maker in requesting and regularly reviewing food situation reports, requiring senior analysts to explain results, and asking hard questions which may require further data collection. Through a case study approach, the seminar participants might examine past decisions on food policy. What information was lacking? What were the key assumptions behind these decisions? Which of those assumptions might have been qualified by research results? What questions were asked of staff members, OFNACER, and others? What were the answers? Where did the information come from? What was its quality?

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[5]Our experience suggests that not all agents do in fact collect prices. There are also problems with the way they are collected.

Simultaneously, efforts must be made to improve the quality of market information provided to decision makers. A poorly functioning market intelligence operation is unlikely to command much confidence. It should be an integral part of a larger well-coordinated effort to collect and analyze data on the food situation. This would include information on production (areas, yields), trade, weather, input supply, etc.[6] The objective would be to provide decision makers with projections of future developments in the food situation.

The market intelligence operation will require a number of full-time, well trained staff members with expertise in statistics and economics. In addition to formal degree training in economics and statistics, senior staff members should undergo special courses in the collection and analysis of agricultural statistics. The U.S. Department of Agriculture (USDA) offers a number of such courses. Further, it would be desirable for staff members to serve several months with a well-functioning market intelligence operation, preferably in a developing country.

It will also require a number of middle and lower level personnel who would be responsible for much of the actual data collection, computer entry and preliminary analysis. A series of training sessions would be required. In addition, the service will require computer facilities. Microcomputers should be adequate during an initial period, but access to a mainframe (CENATRIN) would be desirable as the volume of data to be analyzed reaches major proportions.

Strengthening of a market intelligence service is generally well-suited to a technical assistance project with support from a donor agency. Specific activities to be carried out by the market intelligence service or unit include the following:

1. Collection and analysis of weekly wholesale and retail prices throughout the country. Prices in all the major urban centers should be covered, plus a selection of rural markets and other important transaction points. Efforts should also be made to check prices

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[6]At present these data are collected in a highly inconsistent and uncoordinated fashion.

occasionally in thin market situations so as to compare with those prevailing in major market channels. The data should be submitted promptly and a preliminary analysis performed to identify major movements, inconsistencies, etc. These should be checked out as soon as possible by a mobile team trained in the rapid reconnaissance methods developed for this study. Such checks will keep the price collectors on their toes.

An important consideration in price data collection is to engage people who can do the job effectively and are not hampered by association with a government organization or who have vested interests. To the extent possible, prices obtained from actual transactions are preferred.

More thorough analysis should be undertaken at least quarterly to identify major changes in seasonal and inter-market patterns. Any significant change should be investigated by the mobile team.

A biweekly or at least monthly report on prices should be put out by the market intelligence service. In addition to the basic data, the report would include a summary of the findings of the mobile team to explain any major movements. The report might be incorporated into a monthly or biweekly food situation report which would cover production prospects, weather, imports and exports (through both official and unofficial channels), internal movements, and other items as appropriate. The primary clients of this report would be decision makers. An expurgated version might be made public.

2. Collection and analysis of information on grain movements. This is much more difficult than collecting prices. It may be possible to use police checkpoints to obtain information on produce movements. If inter-regional trade is not restricted, traders will be less hesitant to cooperate with these efforts, thus making it less difficult to keep track of the volume of grain movements, at least in a rough fashion.

3. Purposeful sampling of producers selling grain. We discovered in our study that few of the farmers in the sample actually sold grain. The possibility exists that a small number of relatively well-to-do farmers are responsible for a major portion of the grain which enters the market, particularly in a short-crop year. The degree of concentration of sales should be estimated through surveys of traders buying grain from farmers. It would be desirable to ascertain the degree of skewness in

the grain entering the market. To what extent, is it dominated by a relatively small percentage of farmers? What is the geographic distribution of these farmers? Does the pattern vary between good and bad years? Is there, as one might expect, a greater degree of concentration of sales in a poor crop year? What are the characteristics of farmers selling grain regularly for market? Do they depend on or specialize in the production of grain for market? What is the pattern of sales throughout the year?

These are some of the questions to which our studies provide incomplete answers. A thorough analysis of the relevant data from ICRISAT and the SAFGRAD Farming Systems Unit (FSU) will shed more light on these questions. If, in fact, there is a high degree of concentration in grain sales, especially in a poor crop year, this has important implications for policy. Based on our experience and that of others, it should be possible to devise a relatively simple and relatively inexpensive means of monitoring trends in farmer grain sales. It should be a simpler version of the one we attempted in our study, and it would focus on grain disappearance in a sample of farmers actually selling grain. This would be preferable to a random selection of villagers, most of whom do not sell any significant quantity of grain.

4. Collection and analysis of trade data on grains in particular and food in general. This would include food aid as well as commercial imports and exports. Efforts should be made to determine amounts coming into the country and going out by road and rail which are not part of official consignments. It is fruitless to try and stamp out this trade; rather the focus should be upon understanding it and finding ways for the country to benefit from it.

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APPENDIX A

LIST OF PROJECT DOCUMENTS

AND

EXECUTIVE SUMMARIES OF RESEARCH REPORTS

LIST OF PROJECT DOCUMENTS

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2. Farm Level Grain Security in Burkina Faso, Charles A. May

3. Market Surplus in Burkina Faso: A Study of Grain Disposal Patterns, Ellen Jean Szarleta

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5. An Economic Anthropological Analysis of Grain Marketing in Burkina Faso: Interpretation Based on Field Observations, Mahir Saul

6. Grain Markets in the Volta Noire Region of Burkina Faso, Ira Green

Volumes I, III and IV exist in both English and French. Volume II exists only in French.

Also available from CRED is A Manual for Administration of Research and Development Projects by Marily Knieriemen. This manual was written during CRED's field research in Burkina Faso, and is published separately. Please write to CRED's Publications Coordinator (Lorch Hall, University of Michigan, Ann Arbor, MI 48109-1220, U.S.A.) for further information.

EXECUTIVE SUMMARY

RESEARCH REPORT #1

PRIDE, PREFERENCE AND PRACTICE: FARMERS' GRAIN DISPOSAL DECISIONS IN A BURKINABE COMMUNITY

by Constance M. McCorkle

This is an anthropological study of (a) the importance of staple foodgrains in the economic, nutritional, political, social, and ideological existence of a Burkinabè farming community; and (b) farmers' preferences concerning the ordering and desirability of selling different commodities. The research was conducted in 1983/1984 in the Volta Noire village of Dankui, near Ouarkoye, about 25 km east of the Volta Noire River and 46 km south of Dédougou. Average rainfall in the region is 600 to 1000 mm per year. Sorghum and millet are the main food crops, and cotton is the main cash crop. Villagers regularly attend a medium-sized bush market 12 km away and occasionally visit other markets in the area. The total village population was about 850, of which 33% were Bwaba, 30% Mossi, 30% Fulani, 5% Dafing, and 1% Samo.

In Dankui grain is far more than just one among many items that can be sold or eaten. It is, of course, the staff of life in the diet; but it is also the coin in which much of social, political, and ideological exchange is conducted; and it is one of the principal measures of a man's worth. In addition to direct daily consumption, grain is also used in exchange for milk, dolo, and other grains; to reward work parties and pay agricultural laborers and herders; for tribute, gifts, and tithes; for seed and feed; for ceremonial and social consumption; for ritual reserves; and for sales. When drought strikes, all these domains are impacted. Small wonder, then, that disposals of staple food grain are hedged about with sociocultural prescriptions and proscriptions, codes of "honor", and taboo. Moreover, these beliefs are no mere matter of useless cultural embroidery; they offer sound advice on how men should go about the prudent, civic-minded, and self-rewarding management of their

cereal stocks. As we have seen, these maxims are particularly precise for commercial disposals. In the ultimate analysis, grain is not a preferred market commodity in contemporary Dankui.

There is a socioeconomically adaptive "code of honor" that forms what seems to guide Dankui farmers' compound-level grain disposal decisions. This code is particularly precise with regard to sales. In essence, it advises the following, ideal hierarchy of marketing behavior: no grain should be marketed from compound production unless a surplus clearly will remain after all other predictable disposals are budgeted; this surplus should be offered for sale first to kith and kin; second to co-villagers or to the community at large, e.g., through the Farmers' Group; and lastly to "outsider" individuals or institutions. Additionally, the code advises farmers to stave off grain sales until the hungry season. Then, prices naturally rise as local cereal supplies decrease, and as demand among less successful and/or prudent farmers cum corporate managers increases. Sales to kith, kin, and co-villagers at this time of the year earn "honor" for the seller, who is seen as a wise administrator of compound resources and as something of a community benefactor. But the highest kudos of all go to men who make no commercial cereal transactions across the year, and who not only meet all of their own compound's annual grain needs but also donate hungry season surpluses to their less fortunate fellows.

Farmers were shown 20 photographs and were asked "If you need cash and you have the following ways to obtain it, which would you choose first, and why? Second, and why? Third, and why?" etc. The photographs included commodities that farmers could sell and also depictions of credit/loan arrangements. The following table of Marketing Preference Scale (MPS) items shows how villagers would prefer to order the ways in which they would obtain cash income.

Both the above survey and more qualitative information reveal that villagers do not prefer to market grain. Farmers in this relatively rich ecozone of Burkina Faso have many other agricultural marketing alternatives. Principal among these is cotton, which rose to this importance in large part through the efforts of SOFITEX/ORD and, earlier,

TABLE 1

RELATIVE RANKINGS OF MPS ITEMS ACROSS TOTAL SAMPLE AND BY ETHNIC GROUP

	Total	Bwaba	Mossi
Cotton	1	1	1
Poultry	2	2	3
Gourds	3	3	2
Shea Nuts	4	4	4
Sesame	5	5	5.5
Small Ruminants	6	6	5.5
Peanuts	7	10	7
Pigs	8	9	9
Beans	9	11	8
Loan from Relative	10	7.5	12.5
Loan from Farmers' Group	11	7.5	16
Moped/Motorcycle	12	12	10.5
Rice	13	14	12.5
Maize	14	13	14
Cattle	15	15	10.5
Loan from Trader	16	16	18
Millet	17	18	15
Sorghum	18	17	17
Bicycle	19	19	19
Cart	20	20	20

NOTE: $R = .88$
$p > .01$
$t = 7.95$
$p > .001$

Spearman's p (rho) or R:

$$p = 1 - \frac{6 \sum d^2}{N (N^2 - 1)}$$

t-test (two-tailed):

$$t = P \sqrt{\frac{N - 2}{1 - 2}}$$

$df = 2$

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

CFDT (Compagnie française pour le développement des fibres textiles). Farmers seem to like the marketing arrangements for cotton, and therein may lie some lessons for grain marketing. Some of these desirable marketing characteristics are: announcement of prices just before the planting season; guaranteed purchase of all output; timeliness of purchases; lump sum payment; fairness and preciseness; involvement of trusted villagers; and special bonus rewards to villages with high yields.

EXECUTIVE SUMMARY

RESEARCH REPORT #2

FARM LEVEL GRAIN SECURITY IN BURKINA FASO

by Charles A. May

This monograph provides detailed descriptions of (a) the methodology used in the village studies, (b) the five villages studied between December 1983 and November 1984, and (c) the patterns of grain transactions observed. The last is used in an analysis of staple food security of farm families, especially in the northern deficit areas.

The core of the research methodology was a series of questionnaires concerning grain sales, grain purchases, grain consumption, and grain received or given outside the monetary market. These questionnaires were administered every two weeks to approximately 45 "decision units" in each village. The following information was also collected: village census, (once); household census (monthly updates); harvest (once); on-farm storage (quarterly); area cultivated in each major crop (once); durable goods (once); measuring units (once); animal census (quarterly).

Two of the study villages are in the Yatenga region and typically have a cereal deficit. Two other study villages are in the Volta Noire and have often been about self-sufficient or marginally surplus, but during the survey year they had poor harvests. The fifth village is in Hauts-Bassins and typically has a grain surplus. This fifth village was not included in the analysis for this monograph.

In the four villages analyzed, nonmarket grain transactions were considerably more important than market transactions. In the two northern (Yatenga) villages, OFNACER and cereal banks were more important sources of farmers' grain purchases than they were in the two Volta Noire villages. In one of the Yatenga villages, farmers seemed to buy the preferred cereal (millet) in the early post-harvest season when prices were low and then turned to their own stocks later as prices rose.

Cereal banks vary considerably from one village to another and from region to region. Those in the Yatenga appear to be effective market participants when they have cereal to sell. The cereal banks in the former Volta Noire are more effective as bulking agents for outside buyers, mostly OFNACER and SOFITEX. The variation across regions can be attributed to the goals set up for the cereal banks at their inception. The Yatenga banks are seen as distribution centers while the former Volta Noire banks are collection agents. The variation within regions is commonly attributed to administrative inadequacies and lack of capital (Pfluger 1984:26 and Kat 1983:Chapter VI, 3). Often overlooked however, is the need for a stable supply to be furnished to the cereal banks acting as distribution centers. The data from this research indicate that a functioning cereal bank could capture a larger portion of the market if their supplies were adequate throughout the year.

The private market appears to vary in its ability to meet consumer cereal security just as do the cereal banks. The markets in Yatenga are more established and have, if 'home-boy' traders are involved, a regular supply of cereal grains. Thin markets, such as Bougouré, are partly a result of the absence of this type of trader in the community. Other reasons often cited, by traders themselves, for not providing a 'backflow' of cereals into these thin markets include: low supply, the increased rate of credit defaults in chronically deficit areas and increased demands for outright gifts.

Further proof of the private market as non-homogeneous across the nation is the surprisingly limited importance of the private market to both sales and purchases in the surplus production areas. The market economy has as yet been unable to supercede the traditional exchanges that occur among households. In those parts of Yatenga where the private market is well established, for example Mené, household purchases and sales are minimal.

In other areas of established markets, the private trade can be a major contributor to cereal grain security. Traders' rate of response to economic stimuli is much quicker than that of the parastatal OFNACER. Note the importation of freshly harvested Ghanaian and Ivorian maize into

the extreme north of the country at Mené. Major traders in Ouahigouya are in daily contact, via telephone, with other major marketing centers in the country, notably Ouagadougou and Bobo-Dioulasso, in order to obtain market information. Traders with the knowledge of the market and the resources to act are able to respond to stressful economic circumstances in a short period of time. However, such traders are a scarce human resource in Burkina Faso and by no means control trade in all corners of the country.

EXECUTIVE SUMMARY

RESEARCH REPORT #3

MARKET SURPLUS IN BURKINA FASO: A STUDY OF GRAIN DISPOSAL PATTERNS

by Ellen Jean Szarletta

This study examines the pattern of grain disposal among households in five villages of western Burkina Faso. The southernmost village of the five usually has a surplus of grain while the two most northerly villages usually have deficits. Farmers were surveyed every two weeks between December 1983 and November 1984.

One striking finding is the importance of nonmarket disposals of grain. Gifts of grain given and received far exceeded grain sales or purchases in the four villages with complete data.

Analysis of grain sales patterns shows that grain harvest is by far the best predictor of sales. A 1.0% increase in harvest was associated with 0.82% increase in sales.

Several variables which were expected to be related to sales were not found to be so. These include family size (in consumer equivalents) livestock holdings, and grain price. Lack of price responsiveness here is a very narrow phenomenon because the only price variation was among the five villages and over the twelve months of the year.

EXECUTIVE SUMMARY

RESEARCH REPORT #4

CEREAL SALES BEHAVIOR AMONG FARM HOUSEHOLDS IN FOUR VILLAGES OF BURKINA FASO

by Christopher R. Pardy

This study analyzes the cereal sales patterns in four Burkina Faso villages and examines factors which help explain the amount of cereal that different households sell. The study covers the 1983/84 crop year. Data were collected monthly from thirty households in each of the following four villages: Nédogo, Poédogo, Dissankuy, and Diapangou.

Nédogo is located in the Central Plateau, approximately 30 km northwest of Ouagadougou. Because of high population pressure, fallow periods have become shortened, and soil fertility has deteriorated. Annual rainfall in Nédogo is between 700 to 800 mm. The cropping pattern is dominated by cereals, mainly millet (57% of the cropped area) and white sorghum (21%). The principle cash crop in Nédogo is peanuts.

Poédogo is located in the southern part of the Central Plateau, near Manga, an active cereal grain market. This village generally receives between 800 and 900 mm of rain annually. As in Nédogo, cereal crops represent the largest amount of cropped area (92%), but sorghums, and especially white sorghum, are relatively more important. Peanuts represent the principle non-cereal crop.

Dissankuy is located in the relatively fertile Volta Noire region, approximately 120 km north of Bobo-Dioulasso. Land in this area is less limiting than on the Central Plateau, and grain yields are higher. Annual rainfall is between 800 to 900 mm, and cotton is produced on about 15 percent of the land. Other non-cereal crops include peanuts and bambara nuts, although the former is more important than the latter.

Diapangou receives annual rainfall in the 700 to 800 mm range and is located in a land abundant zone, east of Ouagadougou and approximately 25 km from Fada. Shifting cultivation is practiced in this village. In

Diapangou, millet and white sorghum are grown in an association which includes approximately 75 to 90% millet. Peanuts are the most important non-cereal crop.

The following tables provide information on the amount of sales in each of the four villages.

In Dissankuy, regression analysis shows that a household's cereal sales are significantly, positively related to the quantity of cereal harvested and the amount of animals owned; and sales are negatively related to the number of consumer units in the household. In Nédogo, the regression analysis shows a significant, positive relationship only between a household's cereal sales and its cereal harvest. For the other two villages, Poédogo and Diapangou, the regression analysis did not reveal significant explanatory relationships.

TABLE 1

YEARLY GROSS CEREAL SALES BY VILLAGE

	Gross Sales (kg)				
	Sellers			Sample	
Village	Sum	Per Household	Per Producer Equivalent	Per Household	Per Producer Equivalent
Nédogo	8,033	286.89	42.76	277.00	42.13
Poédogo	8,799	488.83	82.70	419.00	71.42
Dissankuy	4,859	373.77	72.31	179.96	39.47
Diapangou	9,765	443.86	79.98	390.60	71.49
Total	31,456	388.35		308.39	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE 2

CEREAL HARVEST AND CEREAL SALES AS PERCENT OF HARVEST

	Harvest (kg)	Sales/Harvest (%)
Nédogo	38,873	20.7
Poédogo	35,355	24.9
Dissankuy	32,809	14.8
Diapangou	45,800	21.3

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

EXECUTIVE SUMMARY

RESEARCH REPORT #5

AN ECONOMIC ANTHROPOLOGICAL ANALYSIS OF GRAIN MARKETING IN BURKINA FASO: INTERPRETATION BASED ON FIELD OBSERVATIONS

by Mahir Saul

Saul presents an analysis of the political economy of grain marketing, rich in enthnographic detail. Beginning with a concise history of grain markets which traces the current marketing structure to pre-independence, he shows the importance of the growth of major cities and the events relating to the drought of 1972-73 on the current structure of grain markets. He gives a complete overview of grain marketing by presenting data on: types of market participants; patterns of grain flows; traders in the major cities and secondary market centers; grain storage by traders and farmers; and the effects of government and large organizations on supply channels; market structure and prices; competition; marketing behavior of farmers; and the relationship between traders and farmers. The data are based on field work conducted in central and western Burkina Faso.

Two main themes are woven throughout the report: (1) the importance of access to financial capital in being able to influence the market; and (2) the orientation of the grain collection system toward supplying grain to major cities, particularly Ouagadougou. He concludes that these factors together have lead to stability in the market structure and supply channels over the years, and that various government interventions have in fact furthered this.

In discussing the behavior of both farmers and traders, he distinguishes between those with access to large sums of capital and those without, indicating how different their behavior is. While the former are a relatively few, he points out that they have the most influence on the market.

Saul explains that increased competition in recent years, as a result of increasingly poor harvests, has begun to shake this structure,

however. The result is to create an uncertain trading environment, which is having the effect of realigning supply channels in the west from the financially endowed merchants in Bobo-Dioulasso to financially endowed merchants in Ouagadougou or Ouahigouya. While the competition actually takes place at the level of the middlemen and farmers, they are not the ones who ultimately influence its outcome.

Saul indicates that, while the majority of middlemen involved in the grain market operate with very small funds and rely on quick turnover, it would be a mistake to conclude that the market as a whole is highly competitive, but rather that even these independent actors are ultimately under the influence of major merchants. Thus, he implicitly cautions against deducing market structure from the more evident or observable characteristics of the markets.

EXECUTIVE SUMMARY

RESEARCH REPORT #6

GRAIN MARKETS IN THE VOLTA NOIRE REGION OF BURKINA FASO

by Ira Green

This is a study of market conditions facing farmers in the Volta Noire region of Burkina Faso. Research was conducted in the region's markets and villages in 1983/1984. The Volta Noire is typically a surplus region and is an important source of grain for Ouahigouya, Bobo-Dioulasso, and Ouagadougou. Within the region, the southern part receives more rainfall and thus has higher grain production. The northern part is more marginal and contains many villages which are in deficit.

The Volta Noire grain trade is dominated by large, wholesale traders from Ouahigouya and from Bobo-Dioulasso. Operating on successively smaller scales are the following other traders found in the region: regional wholesale traders operating independently; local assemblers working for others or independently; village brokers who locate producers with grain for other traders; the village agent who actually buys in the village on behalf of a large trader; the vendeuse who operates on the smallest scale either independently or as a small assembler for a larger trader.

Three levels of marketplaces can be identified in the Volta Noire: small bush markets serving two or three villages some distance from main roads; regional bush markets serving several villages and small bush markets with fair access to transportation; and central markets at major crossroads or in cities.

OFNACER buys grain in the Volta Noire between November and March. It purchases from village cooperative groups, private traders, producers, and Village Defense Leagues (CDR's).

Farmers face several alternatives concerning the timing of sales, the location of sales, the buyer, and the items they sell. On-farm storage

seems adequate to allow farmers to hold grain until they wish to sell. Most farmers had several places at which they could sell and several types of traders to whom they could sell. Also, most farmers could sell cash crops (e.g. cotton), small stock and other items instead of grain to raise cash.

In the Volta Noire, the grain marketing system is relatively competitive. At the lowest levels of the marketing system producers can find many buyers for their grain. Generally, there is very little price collusion among these intermediaries and relatively free entry in and out of the system at this level. In the villages of the deficit areas, there is a greater tendency for trader monopsony. Due to the low volume of grain marketed in this region, there are few higher-level intermediaries dealing in the deficit areas. This allows the village agent to monopsonize the large-scale grain transactions and impose a somewhat lower price on the producer. But most of the village agent purchases are during the immediate post-harvest season when marketplace prices are equally low. Thus, the relative price difference between the village and the marketplace is not significant.

In the surplus areas, markets are generally more competitive, but certain trader practices reduce the benefits to producers selling grain. The markets in the surplus area are dominated by the long-distance traders from Ouahigouya and Bobo-Dioulasso. These traders are competing for the available grain surplus in the region. The Ouahigouya traders are by far the largest, and tend not to compete against each other. They offer higher prices than their Bobo-Dioulasso counterparts and OFNACER. But their purchases are limited to the villages and to certain times of the year, in particular during the immediate post-harvest season.

The marketplaces of the surplus area are dominated by the Bobo-Dioulasso traders and the large, regional wholesalers. While there are many traders competing for grain in these markets, the competition is mitigated because of the producer-trader relationship and the relative difficulty in entering the higher levels of the marketing system. The producer-trader relationship allows traders to pay less for the

producers' grain than they would in an open market transaction. Moreover, the limited availability of capital reduces the number of large traders operating in these markets and in turn the level of competition. Nevertheless, producers find the financial loss due to lower prices somewhat outweighed by the social benefits of the producer-trader relationship.

Marketing margins and trader profits are generally not excessive, but in years when the harvest is quite bad, traders can earn excess profits in the grain markets. In addition, margins are higher for the long distance traders from Ouahigouya because of the higher resale prices they face in their target markets.

There is fairly good market access in the Volta Noire. Producers at all levels of the marketing system have access to at least one, if not more marketing outlets. However, in the lowest levels of the system, producers may have to accept lower prices in order to attract traders to purchase at these levels.

Markets are integrated only on a local basis and not throughout the region. Neither producers nor traders look outside their local trading areas for alternative markets. Only when grain supplies in their region are very low do they venture into new markets. Moreover, long-distance traders tend to restrict their activities to one or two areas of the Volta Noire. As such, the markets they trade in are more closely tied to their target markets than to other markets in the Volta Noire.

APPENDIX B

STATISTICAL APPENDIX

TABLE B.1

PROJECTIONS FOR RESIDENT POPULATION BY ORD
(in thousands)

Year	Center	Center East	Center North	Center West	East	Hauts-Bassins[a]	Yatenga	Sahel	Bougouriba	Volta Noire	Total
1971	881	378	590	736	380	544	495	331	334	594	5,263
1972	897	385	600	749	387	554	503	336	340	604	5,355
1973	913	391	611	762	394	563	512	342	345	615	5,448
1974	929	398	622	775	400	573	521	348	351	625	5,542
1975	945	405	632	789	407	583	530	354	357	636	5,638
1976	961	412	643	802	414	593	539	361	364	647	5,736
1977	978	419	655	816	421	603	549	367	370	658	5,836
1978	995	426	666	831	429	614	558	373	376	670	5,938
1979	1,012	434	677	845	436	625	568	379	383	681	6,040
1980	1,030	441	689	860	443	635	578	386	390	693	6,145
1981	1,048	449	701	875	451	646	588	392	396	705	6,2511
1982	1,066	457	713	890	459	638	598	399	403	717	6,360
1983	1,084	465	725	905	467	669	608	406	410	730	6,469

SOURCE: INSD - Direction de la Démographie, based on 1975 census.

NOTE: [a]Population of the Hauts-Bassins and Comoe Regions.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.2

GRAIN PRODUCTION PER CAPITA
(in kilograms)

Year	Center	Center East	Center North	Center West	East	Hauts-Bassins	Yatenga	Sahel	Bougouriba	Volta Noire	Total
1971	154.5	150.2	209.3	84.2	193.0	149.7	117.6	79.0	307.0	197.2	159.1
1972	160.4	154.6	180.4	103.5	190.7	132.8	125.8	58.6	301.9	191.7	156.5
1973	147.4	140.4	171.5	131.2	48.5	131.3	113.7	58.8	144.1	160.5	131.1
1974	243.8	131.7	184.4	197.4	232.8	216.9	169.3	123.9	130.5	150.7	186.8
1975	178.9	215.1	199.1	225.1	230.5	206.9	179.6	125.4	195.2	334.6	212.1
1976	152.9	149.1	149.4	97.9	238.8	151.0	118.6	116.3	174.6	266.2	159.2
1977	172.9	157.2	178.7	103.0	252.2	162.6	130.6	85.1	180.0	317.1	174.5
1978	149.6	150.4	173.8	127.2	236.0	224.8	135.5	140.8	198.2	264.2	177.4
1979	179.8	171.2	152.5	178.7	245.5	205.4	117.6	116.3	207.8	284.5	187.6
1980	149,7	184.5	110.1	100.6	141.4	202.5	68.0	116.8	217.1	222.1	148.5
1981	187.4	180.3	187.7	126.3	196.1	214.3	117.2	172.7	223.4	248.7	183.4
1982	175.3	142.6	124.2	92.4	194.9	225.5	89.5	143.6	220.3	280.0	166.8
1983	152.4	195.6	118.8	118.7	180.3	179.2	87.4	91.7	180.1	240.3	153.6

SOURCE: INSD - Direction de la Démographie, based on 1975 census.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.3

REGIONAL GRAIN NEEDS
1971-1983
(in kilograms)

Year	Center	Center East	Center North	Center West	East	Hauts-Bassins	Yatenga	Sahel	Bougouriba	Volta Noire	Total
1971	169152	72576	113280	141312	72960	104448	95040	63552	64128	114048	1010496
1972	172224	73920	115200	143808	74304	106368	96576	64512	65280	115968	1028160
1973	175296	75072	117312	146304	75648	108096	98304	65664	66240	118080	1046016
1974	178368	76416	119424	148800	76800	110016	100032	66816	67392	120000	1064064
1975	181440	77760	121344	151488	78144	111936	101760	67968	68544	122112	1082496
1976	184512	79104	123456	153984	79488	113856	103488	69312	69888	124224	1101312
1977	187776	80448	125760	156672	80832	115776	105408	70464	71040	126336	1120512
1978	191040	81792	127872	159552	82368	117888	107136	71616	72192	128640	1140096
1979	194304	83328	129984	162240	83712	120000	109056	72768	73536	130752	1159680
1980	197760	84672	132288	165120	85056	121920	110976	74112	74880	133056	1179840
1981	201216	86208	134592	168000	86592	124032	112896	75264	76032	135360	1200192
1982	204672	87744	136896	170880	88128	122496	114816	76608	77376	137664	1221120
1983	208128	89280	139200	173760	89664	128448	116736	77952	78720	140160	1242048

SOURCE: Calculated from regional population figures (see Table B.1), using 192 kg/person minimum consumption requirement.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.4

OFNACER STORAGE CAPACITY
AS OF MAY 10, 1983

C. D. G.	Buffer Stock Warehouses (1500 et 750T)	"Aide au Sahel" Warehouses (500T)	Temporary Covered Silos (550T)	Galvanized Metal Silos (200T)	Warehouses Security Stock	Total
OUAGADOUGOU	(2) 5000T	-	-	-800T	-	24350T
- Ouaga	(4) 6000T	-	(11) 6050	-	6500T	-
- Pô	-	-	-	(1) 200T	1500T	1700T
- Manga/Zorgho	-	-	-	(2) 400T	-	400T
Sub-Total	11000T	-	6050	1400T	8000T	26450T
BOBO-DIOULASSO						
- Bobo	(2) 3000T	-	(3) 1650T	-	3500T	8150T
- Banfora	-	-	-	-	2000T	2000T
Sub-Total	3000T	-	1650T	-	5500T	10150T
KOUDOUGOU						
- Koudougou	-	-	-	-	1000T	1000T
Sub-Total	-	-	-	-	1000T	1000T
DEDOUGOU	(1) 1500T	-	(4) 2200T	(1) 200T	5000T	8900T
Sub-Total	1500T	-	2200T	200T	5000T	8900T
KOUPELA						
- Koupéla	(1) 1500T	-	-	(2) 400T	-	1900T
- Tenkodogo	-	-	-	-	2000T	2000T
- Zabré (1/Zorgo)	-	-	-	(2) 400T	1000T	1400T
Sub-Total	1500T	-	-	800T	3000T	5300T
GAOUA						
- Gaoua	-	-	-	-	2500T	2500T
- Diébougou	(1) 1500T	-	-	-	2000T	3500T
Sub-Total	1500T	-	-	-	4500T	6000T
FADA						
- Fada	(2) 3000T	-	-	-	3000T	6000T
- Sougo/Koalla	-	-	-	200T	-	200T
Sub-Total	3000T	-	-	200T	3000T	6200T
DORI						
- Dori	(1/2) 750T	(4) 2000T	-	-	-	2750T
- Gorom-Gorom	-	(3) 1500T	-	-	-	1500T
- Arbinda	-	(3) 1500T	-	(2) 400T	-	1900T
- Gorgadji	-	-	-	(1) 200T	-	200T
- Sebba	-	(3) 1500T	-	(2) 400T	-	1900T
- Djibo	-	(4) 2000T	-	-	-	2000T
Sub-Total	750T	8500T	-	1000T	-	10250T
OUAHIGOUYA						
- Ouahigouya	(1) 1500T	-	(2) 1100T	(1) 200T	-	2800T
- Banka-Thiou	-	-	-	(2) 400T	-	400T
- Titao	-	(3) 1500T	-	-	-	1500T
Sub-Total	1500T	1500T	1100T	600T	-	4700T
KAYA						
- Kaya	(1) 1500T	-	-	-	-	1500T
Sub-Total	1500T	-	-	-	-	1500T
TOTAL GENERAL	12(1/2)+4 25250T	(20) 10000T	(20) 11000T	(22)-1 4200T	30000T	80450T

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TABLE B.5

WEIGHT EQUIVALENTS OF RETAIL UNITS SOLD BY OFNACER IN 1984

Grain \ Measure	Pot (kg)	Double Pot (kg)	Demi tine (kg)	Tine (kg)
Millet	0,8	1,6	8	16
White Sorghum	0,8	1,6	8	16
Red Sorghum	0,69	1,38	6,9	13,8
Corn	0,695	1,39	6,95	13,9
Hulled Rice	0,815	1,63	8,15	16,3

SOURCE: Note de Service by the Commercial Director of OFNACER, January 10, 1984.

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.6a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: BOUGOURIBA
CDG: GAOUA, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	.1	0.	0.	0.	0.	0.	0.	.3	.9	4.5	81.3	62.3	149.4	(19)
Red sorghum	2.0	0.	.0	0.	0.	0.	0.	0.	0.	.4	.4	0.	2.9	(0)
Millet	.4	0.	.1	0.	0.	.1	.1	2.5	15.3	20.8	89.4	19.0	147.6	(19)
Corn	.0	0.	.1	0.	.1	0.	0.	0.	.3	.3	35.3	4.1	40.3	(5)
Spoilage	.1	2.9	4.0	11.6	36.7	12.2	2.7	1.3	22.2	24.5	20.7	85.9	224.7	(29)
Rice	5.6	8.3	9.9	8.2	15.8	12.9	11.9	14.1	36.2	23.1	33.9	31.4	211.6	(27)
Total	8.3	11.2	14.1	19.9	52.6	25.2	14.7	18.2	75.0	73.6	260.9	202.7	776.4	(100)
Percent of Total	(1)	(1)	(2)	(3)	(7)	(3)	(2)	(2)	(10)	(9)	(34)	(26)	(100)	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.6b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: BOUGOURIBA
CDG: GAOUA, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	58.1	11.1	11.7	5.0	37.5	95.5	106.5	140.4	50.0	189.5	108.6	49.0	863.1	(60)
Red sorghum	0.	0.	0.	0.	0.	0.	0.	0.	.1	0.	0.	0.	.1	(0)
Millet	32.6	28.7	22.0	10.8	5.5	.1	0.	0.	10.8	.7	.1	.4	111.9	(8)
Corn	21.6	3.3	.1	0.	0.	0.	0.	0.	.1	0.	5.2	15.3	45.6	(3)
Spoilage	30.0	41.2	6.9	0.	.7	.5	0.	0.	.6	0.	0.	0.	79.9	(6)
Rice	13.2	24.1	26.6	15.3	39.3	22.7	18.3	31.3	63.5	27.6	14.6	31.9	328.5	(23)
Total	155.5	108.4	67.4	31.2	83.0	118.8	124.8	171.7	125.2	217.8	128.6	96.7	1429.0	(100)
Percent of Total	(11)	(8)	(5)	(2)	(6)	(8)	(9)	(12)	(9)	(15)	(9)	(7)	(100)	

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TABLE B.7a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE
CDG: OUAGADOUGOU, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of
White sorghum	15.9	19.2	17.5	6.1	29.0	32.9	34.4	56.3	160.1	229.9	1168.9	821.3	2591.7	(17)
Red sorghum	4.4	0.	.1	.3	.2	.9	64.1	104.9	94.0	374.4	632.1	113.9	1389.4	(9)
Millet	0.	.3	.3	0.	0.	.3	13.5	90.5	501.2	606.8	595.8	281.2	2090.0	(14)
Corn	16.1	20.0	23.4	44.9	169.8	71.6	281.7	112.7	364.0	1175.0	154.4	756.5	3190.4	(21)
Spoilage	0.	0.	0.	0.	0.	0.	6.2	0.	0.	0.	0.	0.	6.2	(0)
Rice	89.9	135.6	123.0	106.6	95.5	170.6	624.0	132.9	232.5	473.7	656.1	2988.1	5828.5	(39)
Total	126.4	175.1	164.3	158.0	294.5	276.4	1023.9	497.2	1351.8	2859.9	3207.4	4961.1	15096.1	(100)
Percent of Total	(1)	(1)	(1)	(1)	(2)	(2)	(7)	(3)	(9)	(19)	(21)	(33)	(100)	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.7b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE
CDG: OUAGADOUGOU, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	641.0	536.6	259.3	185.6	554.4	798.9	391.1	163.8	339.8	410.6	267.4	15.7	4564.1	(24)
Red sorghum	0.	0.	0.	0.	.4	20.8	6.5	1356.2	594.3	1029.8	219.8	140.6	3368.4	(18)
Millet	259.2	30.6	5.5	9.6	4.8	33.7	349.5	70.2	10.3	.6	.8	.1	775.0	(4)
Corn	263.2	86.1	.5	10.5	13.6	36.3	12.3	.7	12.2	106.2	2084.2	1704.8	4330.8	(23)
Spoilage	0.	0.	0.	0.	0.	0.	0.	0.	0.	.3	0.	3.8	4.2	(0)
Rice	763.6	825.4	423.8	275.8	263.7	474.9	432.4	451.6	600.4	418.5	612.6	318.2	5860.9	(31)
Total	1927.1	1478.7	689.1	481.5	837.0	1364.6	1191.8	2042.5	1557.0	1966.1	3184.8	2183.4	18903.4	(100)
Percent of Total	(10)	(8)	(4)	(3)	(4)	(7)	(6)	(11)	(8)	(10)	(17)	(12)	(100)	

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TABLE B.8a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE EST
CDG: KOUPELA, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	0.	0.	0.	.9	0.	.0	0.	6.7	21.4	31.0	72.3	35.2	167.6	(18)
Red sorghum	0.	0.	0.	0.	0.	0.	0.	.0	.5	53.8	203.7	278.6	536.6	(57)
Millet	0.	0.	0.	0.	0.	.0	0.	0.	.0	10.8	29.4	14.1	54.4	(6)
Corn	0.	3.4	0.	0.	0.	0.	0.	0.	.1	2.4	11.3	5.4	22.7	(2)
Spoilage	0.	0.	.4	.0	1.4	2.8	9.5	12.4	2.9	3.9	.0	4.8	38.2	(4)
Rice	7.8	5.1	8.0	5.3	5.9	5.7	7.3	8.7	6.4	9.2	13.5	37.8	121.7	(13)
Total	7.8	9.5	8.4	6.3	7.3	8.6	16.8	27.8	31.5	111.2	330.3	375.8	941.3	(100)
Percent of Total	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(3)	(3)	(12)	(35)	(40)	(100)	

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TABLE B.8b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE EST
CDG: KOUPELA, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	4.2	1.9	2.6	0.	.8	15.9	24.4	37.1	33.7	25.6	276.6	51.5	474.4	(24)
Red sorghum	157.4	0.	0.	0.	0.	0.	0.	2.7	171.9	408.2	16.7	1.9	758.9	(39)
Millet	12.5	7.2	4.9	0.	6.0	6.6	18.9	6.2	11.5	.4	0.	0.	74.4	(4)
Corn	2.6	.1	.1	0.	.0	0.	0.	.1	0.	0.	34.3	273.2	310.4	(16)
Spoilage	1.5	0.	0.	0.	0.	0.	0.	.7	0.	.1	0.	.1	2.4	(0)
Rice	17.3	9.7	13.4	0.	9.3	6.2	33.3	38.6	59.0	26.9	58.6	73.6	346.0	(18)
Total	195.5	18.9	21.0	0.	16.2	28.7	76.6	85.5	276.1	461.3	386.1	400.3	1966.5	(100)
Percent of Total	(10)	(1)	(1)	(0)	(1)	(1)	(4)	(4)	(14)	(23)	(20)	(20)	(100)	

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TABLE B.9a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE NORD
CDG: KAYA, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	0.	0.	0.	0.	.2	1.1	6.2	21.3	6.9	4.1	.4	49.8	90.0	(2)
Red sorghum	0.	.1	.0	.1	0.	0.	.8	12.2	254.1	328.7	481.8	115.1	1193.0	(28)
Millet	0.	0.	.1	0.	0.	0.	.8	1.2	25.8	23.3	9.1	6.4	66.7	(2)
Corn	1.8	1.3	.4	1.0	1.7	14.7	64.6	97.1	197.2	82.5	316.4	556.7	1335.6	(31)
Spoilage	5.8	25.5	72.4	96.4	48.9	58.1	306.3	492.4	201.9	17.7	59.7	10.0	1395.1	(33)
Rice	7.4	8.4	16.0	9.4	8.5	13.8	13.0	14.0	21.0	14.7	20.5	54.1	201.2	(5)
Total	15.1	35.4	89.0	106.9	59.4	87.8	391.8	638.2	706.9	471.1	888.0	792.1	4281.7	(100)
Percent of Total	(0)	(1)	(2)	(2)	(1)	(2)	(9)	(15)	(17)	(11)	(21)	(19)	(100)	

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TABLE B.9b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE NORD
CDG: KAYA, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	70.4	46.9	111.5	178.5	571.7	716.9	557.5	91.4	6.1	86.5	114.3	39.8	2591.4	(27)
Red sorghum	0.	0.	0.	0.	0.	0.	25.9	1003.7	1228.7	841.9	969.9	1098.0	5068.1	(52)
Millet	15.0	8.3	11.1	21.8	4.7	185.6	194.2	22.7	1.2	1.6	.3	0.	456.5	(5)
Corn	287.3	14.4	19.6	16.3	7.8	6.6	.1	2.5	0.	5.2	515.1	263.6	1138.5	(12)
Spoilage	5.3	0.	3.6	.0	2.9	5.1	.1	0.	0.	0.	0.	0.	17.1	(0)
Rice	44.2	23.8	31.1	11.4	22.4	25.4	43.3	54.9	52.9	20.6	77.9	13.9	421.9	(4)
Total	422.2	93.4	176.9	228.0	609.6	939.7	811.1	1175.2	1288.9	955.8	1577.5	1415.2	9693.6	(100)
Percent of Total	(4)	(1)	(2)	(2)	(6)	(10)	(8)	(12)	(13)	(10)	(16)	(15)	(100)	

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TABLE B.10a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE OUEST
CDG: KOUDOUGOU, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	.4	.3	1.7	18.3	6.4	32.2	16.4	6.3	58.8	50.3	358.9	203.5	753.6	(40)
Red sorghum	.0	0.	0.	0.	0.	0.	0.	3.5	13.4	37.9	33.1	.4	88.3	(5)
Millet	.1	.1	0.	.7	.2	.8	.2	0.	2.6	29.8	24.4	53.1	112.2	(6)
Corn	.2	0.	3.6	13.3	71.1	13.4	7.0	11.1	16.6	58.0	52.4	74.7	321.4	(17)
Spoilage	0.	0.	0.	0.	.7	25.2	30.2	4.2	5.3	0.	0.	19.9	85.4	(4)
Rice	5.3	8.3	20.6	81.0	14.1	62.2	21.9	36.6	42.4	56.0	97.4	97.9	543.9	(29)
Total	6.1	8.7	25.9	113.4	92.5	133.8	75.6	61.9	139.1	232.1	566.2	449.5	1904.8	(100)
Percent of Total	(0)	(0)	(1)	(6)	(5)	(7)	(4)	(3)	(7)	(12)	(30)	(24)	(100)	

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TABLE B 10b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: CENTRE OUEST
CDG: KOUDOUGOU, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	30.0	84.8	58.8	17.1	20.5	41.5	107.1	182.2	33.2	47.7	33.7	17.2	674.0	(26)
Red sorghum	1.3	0.	.2	0.	0.	.7	1.0	0.	0.	74.2	65.1	.1	142.5	(5)
Millet	38.0	12.8	5.3	.9	0.	21.8	6.6	39.9	21.4	26.1	6.9	5.5	185.1	(7)
Corn	18.8	5.3	1.6	.3	.1	.8	1.5	4.5	1.1	.4	74.1	365.8	474.3	(18)
Spoilage	.9	2.9	2.2	2.0	4.1	4.3	41.7	2.8	2.8	0.	0.	0.	63.8	(2)
Rice	426.5	28.0	86.2	36.6	16.4	17.8	71.0	69.3	64.2	43.1	100.3	124.8	1084.0	(41)
Total	515.4	133.8	154.3	57.0	41.0	86.8	228.8	298.7	122.7	191.4	280.1	513.4	2623.6	(100)
Percent of Total	(20)	(5)	(6)	(2)	(2)	(3)	(9)	(11)	(5)	(7)	(11)	(20)	(100)	

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TABLE B.11a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: EST
CDG: FADA N'GOURMA, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	17.1	29.1	2.5	14.6	8.0	11.4	14.7	12.9	20.4	80.6	166.0	134.5	511.9	(42)
Red sorghum	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.5	20.0	25.5	(2)
Millet	.3	.9	.0	4.3	11.4	2.7	.0	.5	.5	.1	326.3	29.8	377.0	(31)
Corn	0.	.2	.1	.1	.2	.1	.5	.7	.4	4.3	11.5	59.5	77.6	(6)
Spoilage	0.	0.	0.	0.	0.	0.	0.	0.	.7	14.9	.3	0.	15.9	(1)
Rice	9.2	10.2	10.5	6.5	19.8	14.2	11.6	13.8	16.6	23.6	19.3	55.7	211.4	(17)
Total	26.5	40.4	13.2	25.6	39.4	28.4	26.9	28.0	38.6	123.5	529.0	299.5	1219.5	(100)
Percent of Total	(2)	(3)	(1)	(2)	(3)	(2)	(2)	(2)	(3)	(10)	(43)	(25)	(100)	

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TABLE B.11b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: EST
CDG: FADA N'GOURMA, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	370.3	30.1	6.5	3.1	6.6	119.1	88.0	38.1	41.9	290.8	464.8	286.9	1746.2	(67)
Red sorghum	2.0	8.0	0.	0.	0.	0.	0.	0.	6.0	87.8	47.3	67.2	218.2	(8)
Millet	10.1	1.8	1.3	.4	3.6	.1	11.1	5.2	17.7	1.8	.9	12.2	66.3	(3)
Corn	100.7	23.7	5.9	.8	1.1	0.	3.5	5.2	0.	0.	2.5	27.1	170.6	(7)
Spoilage	.5	.5	7.2	0.	.1	0.	6.1	.1	0.	.4	.3	0.	15.3	(1)
Rice	37.1	46.6	30.5	10.3	8.7	19.8	32.5	23.8	45.4	57.6	55.8	15.9	384.0	(15)
Total	520.8	110.7	51.4	14.6	20.2	139.0	141.2	72.5	111.1	438.4	571.6	409.3	2600.6	(100)
Percent of Total	(20)	(4)	(2)	(1)	(1)	(5)	(5)	(3)	(4)	(17)	(22)	(16)	(100)	

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TABLE B.12a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	0.	0.	0.	0.	0.	0.	0.	0.	.5	10.0	104.7	55.2	170.5	(5)
Red sorghum	30.0	0.	0.	0.	0.	0.	0.	0.	.1	.6	3.6	0.	34.4	(1)
Millet	.1	0.	0.	0.	0.	0.	0.	.1	0.	2.7	59.5	29.0	92.3	(2)
Corn	.1	0.	0.	0.	0.	0.	0.	0.	0.	1.5	21.3	62.4	85.4	(2)
Spoilage	0.	0.	0.	1.3	0.	90.3	0.	1.4	501.7	.1	916.5	56.8	1568.1	(42)
Rice	59.3	24.8	52.7	20.8	7.5	602.0	205.9	307.0	388.3	4.0	15.3	55.9	1743.7	(47)
Total	89.6	24.8	52.7	22.2	7.5	692.3	205.9	308.5	890.6	18.9	1121.0	260.3	3694.4	(100)
Percent of Total	(2)	(1)	(1)	(1)	(0)	(19)	(6)	(8)	(24)	(1)	(30)	(7)	(100)	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.12b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	0.	141.1	40.3	12.0	50.0	79.6	28.4	185.0	0.	257.5	78.1	.5	872.5	(35)
Red sorghum	0.	4.9	0.	0.	0.	0.	0.	0.	170.5	0.	0.	12.9	188.2	(8)
Millet	0.	2.5	.0	0.	0.	0.	24.4	56.6	1.6	0.	0.	0.	85.2	(3)
Corn	0.	19.9	0.	.0	0.	0.	0.	2.3	8.0	1.8	138.9	99.6	270.5	(11)
Spoilage	0.	0.	0.	.4	0.	0.	0.	0.	0.	0.	0.	0.	.4	(0)
Rice	0.	181.3	132.9	18.9	18.1	18.6	12.9	82.5	286.4	88.4	120.1	96.4	1056.5	(43)
Total	0.	349.7	173.2	31.5	68.1	98.2	65.7	326.4	466.5	347.7	337.1	209.5	2473.5	(100)
Percent of Total	(0)	(14)	(7)	(1)	(3)	(4)	(3)	(13)	(19)	(14)	(14)	(8)	(100)	

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TABLE B.13a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: SAHEL
CDG: DORI, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	2.3	3.6	2.6	15.0	3.3	.6	1.9	74.1	134.3	150.3	327.4	471.6	1187.2	(15)
Red sorghum	.6	.3	.2	.2	1.2	1.9	15.5	33.8	446.4	820.3	739.6	289.1	2349.0	(29)
Millet	2.1	2.1	2.2	49.8	1.0	1.2	1.3	23.1	2.4	106.3	71.1	42.6	305.4	(4)
Corn	.2	370.7	231.6	375.4	127.8	202.0	147.9	387.1	14.7	0.	36.6	265.6	2159.9	(27)
Spoilage	139.1	0.	0.	60.0	157.4	154.8	244.3	447.1	158.4	16.5	195.1	38.9	1611.8	(20)
Rice	8.7	19.8	18.4	22.3	23.1	30.8	32.4	34.4	45.6	95.5	61.1	78.5	470.8	(6)
Total	153.1	396.6	255.1	522.7	313.9	391.4	443.4	999.6	801.9	1169.0	1430.9	1186.4	8084.0	(100)
Percent of Total	(2)	(5)	(3)	(6)	(4)	(5)	(5)	(12)	(10)	(15)	(18)	(15)	(100)	

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TABLE B.13b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: SAHEL
CDG: DORI, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	371.4	126.4	205.5	442.6	959.5	1207.8	1384.4	1459.1	840.6	335.1	43.2	.2	7375.7	(56)
Red sorghum	0.	12.1	85.8	75.5	0.	0.	464.2	128.7	487.1	425.0	206.9	186.7	2072.0	(16)
Millet	7.9	67.7	24.7	0.	0.	0.	9.5	720.9	1032.8	236.7	40.8	0.	2140.8	(16)
Corn	50.2	46.2	287.4	104.9	44.6	0.	0.	0.	0.	0.	110.0	15.5	658.9	(5)
Spoilage	57.4	63.5	117.7	3.7	.4	0.	0.	0.	0.	0.	0.	0.	242.8	(2)
Rice	26.8	60.8	84.8	54.4	88.3	85.5	110.0	51.0	38.5	78.0	50.3	14.5	743.1	(6)
Total	513.7	376.8	805.9	681.1	1092.8	1293.4	1968.0	2359.7	2399.0	1074.8	451.1	216.9	13233.4	(100)
Percent of Total	(4)	(3)	(6)	(5)	(8)	(10)	(15)	(18)	(18)	(8)	(3)	(2)	(100)	

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TABLE B.14a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: VOLTA NOIRE
CDG: DEDOUGOU, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	1.1	.8	0.	22.3	0.	0.	.2	1.0	39.7	55.4	240.5	159.9	520.9	(73)
Red sorghum	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	(0)
Millet	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.1	0.	.2	(0)
Corn	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	(0)
Spoilage	0.	0.	0.	0.	0.	0.	.3	16.7	4.1	.2	0.	1.2	22.5	(3)
Rice	5.0	6.1	4.3	1.8	1.1	1.9	3.2	1.5	20.4	51.4	28.8	44.0	169.4	(24)
Total	6.1	6.9	4.3	24.1	1.1	1.9	3.7	19.2	64.2	107.1	269.4	205.1	713.0	(100)
Percent of Total	(1)	(1)	(1)	(3)	(0)	(0)	(1)	(3)	(9)	(15)	(38)	(29)	(100)	

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TABLE B.14b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

VOLTA NOIRE
CDG. DEDOUGOU, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	50.7	42.2	4.0	6.4	5.8	42.6	110.0	218.0	155.2	167.9	237.6	3.9	1044.3	(42)
Red sorghum	0.	0.	0.	0.	0.	0.	0.	0.	13.0	12.0	.1	0.	25.2	(1)
Millet	0.	0.	0.	0.	0.	0.	18.8	14.4	20.4	5.1	0.	1.1	59.8	(2)
Corn	0.	0.	0.	0.	0.	0.	0.	0.	0.	.0	55.0	672.5	727.6	(29)
Spoilage	.4	0.	.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	.8	(0)
Rice	22.0	48.9	60.5	25.7	32.5	23.6	43.5	56.7	71.2	71.9	80.7	115.8	652.9	(26)
Total	73.1	91.1	64.9	32.0	38.3	66.2	172.3	289.2	259.8	257.0	373.4	793.3	2510.6	(100)
Percent of Total	(3)	(4)	(3)	(1)	(2)	(3)	(7)	(12)	(10)	(10)	(15)	(32)	(100)	

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TABLE B.15a

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: YATENGA
CDG: OUAHIGOUYA, 1982-83
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	0.	0.	.7	5.1	.6	.4	.2	2.6	2.9	6.8	27.5	3039.5	3086.6	(18)
Red sorghum	4.7	0.	0.	31.2	61.2	145.5	354.0	798.2	1581.9	653.3	690.8	167.4	4488.3	(25)
Millet	.3	0.	.6	.1	.6	.0	1.3	3.5	1.6	2.0	11.7	240.5	262.4	(1)
Corn	30.9	0.	679.4	506.4	973.3	1271.8	1875.7	460.9	171.5	449.3	1162.1	704.0	8285.5	(47)
Spoilage	0.	0.	50.2	2.0	42.3	16.9	109.8	18.7	38.1	13.4	8.9	699.5	1000.0	(6)
Rice	9.5	0.	32.9	37.4	38.1	58.0	32.7	22.8	34.7	27.2	34.3	154.0	481.7	(3)
Total	45.5	0.	763.9	582.4	1116.1	1492.7	2373.7	1306.9	1830.9	1152.0	1935.4	5005.0	17604.5	(100)
Percent of Total	(0)	(0)	(4)	(3)	(6)	(8)	(13)	(7)	(10)	(7)	(11)	(28)	(100)	

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TABLE 8.15b

OFNACER REGIONAL MONTHLY SALES OF DIFFERENT GRAINS

ORD: YATENGA
CDG: OUAHIGOUYA, 1983-84
(metric tons)

Grains	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
White sorghum	90.1	214.0	49.4	224.2	94.5	479.8	527.4	35.3	6.6	77.5	141.6	68.6	2009.2	(18)
Red sorghum	22.1	6.4	57.0	121.4	278.7	34.8	18.3	819.5	1323.2	937.1	1417.5	808.6	5844.6	(53)
Millet	0.	0.	0.	0.	0.	0.	0.	35.7	3.5	.4	.4	.0	40.0	(0)
Corn	144.9	43.4	118.6	82.9	10.9	1.7	.1	0.	.1	0.	753.2	802.2	1958.2	(18)
Spoilage	47.0	87.6	99.1	16.7	43.7	2.9	3.6	.8	0.	0.	0.	4.4	306.0	(3)
Rice	42.4	77.4	43.3	23.6	81.2	44.1	64.3	41.2	141.5	65.4	99.9	149.9	874.2	(8)
Total	346.6	428.9	367.4	468.8	509.1	563.3	613.8	932.5	1474.9	1080.5	2412.7	1833.7	11032.1	(100)
Percent of Total	(3)	(4)	(3)	(4)	(5)	(5)	(6)	(8)	(13)	(10)	(22)	(17)	(100)	

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TABLE B.16a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: BOUGOURIBA
CDG: GAOUA, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
CDSA Gaoua	97.3	.4	75.3	18.8	37.2	85.5	314.6	41
Diébougou	29.4	.8	56.7	13.8	119.1	42.8	262.6	34
Dano	12.2	0.	6.7	1.2	49.9	10.4	80.4	10
Kampti	0.	1.4	3.4	0.	2.2	31.6	38.7	5
Dissin	10.3	.2	5.0	3.7	15.3	13.7	48.2	6
Batié	.1	0.	.6	2.6	1.1	27.5	31.9	4
Total	149.4	2.9	147.6	40.3	224.7	211.6	776.4	100
Percent of Total	19	0	19	5	29	27	100	

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TABLE B.16b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: BOUGOURIBA
CDG: GAOUA, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
CDSA Gaoua	396.0	0.	58.9	6.0	42.3	156.5	659.8	46
Diébougou	198.6	0.	17.8	39.3	4.7	84.9	345.4	24
Dano	36.8	.1	17.0	.1	5.6	21.7	81.4	6
Kampti	42.3	0.	7.1	.0	14.5	19.5	83.5	6
Dissin	43.6	0.	6.6	0.	0.	16.3	66.5	5
Batié	87.2	0.	4.4	.2	12.7	19.2	123.8	9
Loropeni	30.3	0.	0.	0.	0.	7.9	38.2	3
Nako	18.2	0.	0.	0.	0.	2.3	20.6	1
Legmouin	9.9	0.	0.	0.	0.	0.	9.9	1
Total	863.1	.1	111.9	45.6	79.9	328.5	1429.0	100
Percent of Total	60	0	8	3	6	23	100	

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TABLE B.17a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE
CDG: OUAGADOUGOU, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Ouagadougou Centers:								
Mag. Ouagadougou	581.5	1370.8	956.2	1886.2	6.2	3847.6	8654.5	57
C.V. Direction (Ouagadougou)	668.1	0.	374.9	517.7	0.	889.4	2450.2	16
Nouveau Centre	151.6	3.2	82.0	106.6	0.	102.2	445.7	3
Paspanga	85.9	0.	29.0	35.5	0.	40.9	191.4	1
Dassasgo	53.5	2.6	14.0	25.0	0.	14.4	109.5	1
Baskuy	95.8	4.5	34.3	45.4	0.	52.0	232.1	2
Larle Yaar	102.1	0.	51.7	83.4	0.	105.6	343.8	2
Nab-Rhaga	91.5	1.1	52.8	85.8	0.	95.3	326.5	2
Marché Central	3.4	0.	0.	3.0	0.	8.4	14.8	0
Sankaryaré	74.7	0.	50.7	31.8	0.	102.2	259.5	2
Cissin	70.4	0.	59.0	50.7	0.	55.3	235.5	2
Gounghin	82.4	0.	63.1	104.9	0	118.2	368.7	2
Tanghin Barrage	63.5	0.	44.2	50.8	0.	93.6	252.2	2
Zogona	66.9	0.	38.8	61.4	0.	58.8	226.0	1
Zangoétin	93.7	.9	43.0	51.5	0.	81.1	270.2	2
Ourgou/Lindi	0.	0.	0.	2.0	0.	0.	2.0	0
Kombissiri	0.	0.	0.	0.	0.	.9	.9	0
Pô	151.4	0.	125.5	0.	0.	129.0	405.9	3
Sabsé	0.	.2	0.	0.	0.	0.	.2	0
Ziniaré	55.2	0.	16.0	14.0	0.	12.5	97.7	1
Boussé	42.5	0.	3.0	0.	0.	14.4	59.9	0
Saponé	23.2	0.	41.5	0.	0.	3.4	68.1	0
Tanguin-Dassouri	34.3	0.	10.0	34.3	0.	2.1	80.7	1
Total	2591.7	1389.4	2090.0	3190.4	6.2	5828.5	15096.1	100
Percent of Total	17	9	14	21	0	39	100	

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TABLE B.17b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE
CDG: OUAGADOUGOU, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Ouagadougou Centers								
Mag. Central (Ouagadougou)	2013.7	1245.3	367.3	1802.1	3.8	3156.9	9189.1	49
C.V. Direction (Ouagadougou)	846.9	1583.1	114.4	798.3	.1	808.0	4150.8	22
Nouveau Centre	67.9	56.7	20.0	196.8	0.	182.5	523.9	3
Paspanga	81.0	37.3	21.0	86.5	0.	149.1	375.0	2
Dassasgo	44.4	52.3	21.5	46.7	0.	99.2	264.2	1
Baskuy	52.9	.3	7.0	80.0	.2	89.2	229.6	1
Larle Yaar	74.6	16.7	40.7	262.3	0.	167.2	561.4	3
Nab-Rhaga	89.6	26.8	20.0	54.6	0.	113.6	304.7	2
Sankaryaré	88.9	14.7	7.1	94.0	0.	115.9	320.6	2
Cissin	83.9	29.3	20.0	98.1	0.	90.4	321.9	2
Gounghin	75.5	39.7	26.8	101.9	0.	131.6	375.5	2
Tanghin Barrage	98.9	101.8	19.9	252.0	0.	169.5	642.1	3
Zogona	81.7	35.2	22.9	126.3	0.	89.8	355.9	2
Zangoétin	86.9	38.7	29.3	85.4	0.	164.3	404.5	2
Kombissiri	1.0	0.	0.	134.7	0.	0.	135.7	1
Pô	93.9	20.2	3.1	6.4	0.	193.9	317.6	2
Ziniaré	23.3	15.2	2.1	3.3	0.	52.2	96.2	1
Boussé	27.4	6.0	4.0	0.	0.	34.5	71.9	0
Saponé	31.4	48.9	9.3	94.1	0.	53.1	236.8	1
Tanguin-Dassouri	.2	0.	18.5	7.1	0.	0.	25.7	0
Total	4564.1	3368.4	775.0	4330.8	4.2	5860.9	18903.4	100
Percent of Total	24	18	4	23	0	31	100	

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TABLE B.18a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE EST
CDG: KOUPELA, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Koupéla	74.3	124.5	16.6	6.9	6.0	45.0	273.4	29
Tenkodogo	52.4	111.4	37.6	6.0	10.7	38.5	256.6	27
Zorgo	8.0	7.0	0.	0.	0.	4.4	19.4	2
Garango	0.	0.	0.	0.	14.4	22.0	36.4	4
Zabré	30.4	291.0	.2	9.8	.5	6.2	338.2	36
Gomboussougou	2.5	2.3	0.	0.	0.	2.0	6.7	1
Bitou	0.	.4	0.	0.	6.6	3.5	10.5	1
Total	167.6	536.6	54.4	22.7	38.2	121.7	941.3	100
Percent of Total	10	57	6	2	4	13	100	

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TABLE B.18b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE EST
CDG: KOUPELA, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Garango	36.7	30.0	2.9	24.9	0.	68.8	163.5	8
Tenkodogo	174.9	43.1	32.6	17.0	1.7	107.8	377.2	19
Zorgo	67.5	85.3	4.7	28.6	0.	26.3	212.3	11
Koupéla	91.2	334.1	17.6	50.3	0.	119.8	613.0	31
Zabré	38.1	167.1	11.6	2.1	.7	17.0	236.7	12
Gomboussougou	0.	.3	0.	0.	0.	0.	.3	0
Méguet	23.8	9.1	4.8	0.	0.	.6	38.3	2
Gouguin	19.2	9.8	0.	25.0	0.	2.1	56.2	3
Boulsa	0.	54.1	0.	116.9	0.	1.2	172.2	9
Moktédo	0.	26.0	0.	0.	0.	1.0	27.0	1
Ouargaye	11.0	0.	0.	15.0	0.	1.3	27.3	1
CDR Koupéla	0.	0.	0.	19.3	0.	0.	19.3	1
Zam	12.0	0.	0.	11.3	0.	0.	23.3	1
Total	474.4	758.9	74.4	310.4	2.4	346.0	1966.5	100
Percent of Total	24	39	4	16	0	18	100	

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TABLE B.19a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE NORD
CDG: KAYA, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Kaya	58.8	187.4	56.6	542.2	512.5	52.2	1409.8	33
Marché Kaya	5.0	271.4	0.	198.5	48.8	75.6	599.3	14
Kongoussi	8.6	111.9	.6	54.1	284.8	9.3	469.4	11
Bourzanga	0.	132.4	0.	62.2	152.6	3.5	350.7	8
Boulsa	17.6	74.3	9.5	144.8	17.2	25.7	289.2	7
Pissila	0.	63.0	0.	56.2	56.3	2.5	178.1	4
Barsalogo	0.	96.5	0.	50.1	72.4	9.7	228.7	5
Tikaré	0.	0.	0.	50.8	48.2	11.8	110.8	3
Tougouri	0.	35.1	0.	22.0	48.8	5.5	111.5	3
Yalogo	0.	69.9	0.	99.9	13.0	0.	182.8	4
Rollo	0.	36.5	0.	11.9	52.0	.7	101.1	2
Téma	0.	48.1	0.	32.6	0.	.4	81.1	2
Korsimoro	0.	3.9	0.	6.2	59.8	2.0	72.0	2
Boussouma	0.	0.	0.	0.	15.1	0.	15.1	0
Guibaré	0.	9.5	0.	0.	13.5	.5	23.5	1
Mané	0.	26.8	0.	4.0	0.	1.7	32.6	1
Koalla	0.	26.0	0.	0.	0.	0.	26.0	1
Total	90.0	1193.0	66.7	1335.6	1395.1	201.2	4281.7	100
Percent of Total	2	28	2	31	33	5	100	

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TABLE B.19b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE NORD
CDG: KAYA, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Central Kaya	962.4	2005.7	244.1	254.4	6.3	222.0	3694.9	38
Marché Central Kaya	119.9	0.	0.	55.9	10.6	46.2	232.6	2
Kongoussi	405.6	699.3	97.8	125.0	0.	40.6	1368.3	14
Bourzanga	82.9	120.0	0.	66.6	0.	.8	270.4	3
Boulsa	29.8	5.8	24.4	2.1	0.	27.0	89.0	1
Pissila	100.7	284.5	24.2	88.2	0.	6.3	503.8	5
Barsalogo	221.6	378.8	24.0	109.6	0.	8.9	742.9	8
Tikaré	89.1	104.9	12.4	22.8	0.	1.6	230.8	2
Tougouri	64.9	119.7	10.4	36.8	0.	1.7	233.6	2
Yalogo	153.0	251.1	0.	88.5	0.	.5	493.1	5
Rollo	76.5	117.8	1.9	28.0	.0	0.	224.3	2
Téma	25.5	166.2	4.5	21.9	0.	2.8	220.9	2
Korsimoro	27.3	128.4	1.8	94.1	.2	55.8	307.6	3
Boussouma	40.5	191.7	0.	43.0	0.	1.9	277.1	3
Guibaré	31.4	30.0	0.	6.7	0.	0.	68.0	1
Mané	26.6	282.8	8.5	64.8	0.	3.7	386.4	4
Koalla	0.	0.	0.	0.	0.	0.	0.	0
Dablo	49.2	13.0	0.	2.5	0.	0.	64.7	1
Bélogo	8.4	0.	0.	0.	0.	0.	8.4	0
Sabsé	76.0	168.6	2.5	27.5	0.	2.1	276.8	3
Total	2591.4	5068.1	456.5	1138.5	17.1	421.9	9693.6	100
Percent of Total	27	52	5	12	0	4	100	

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TABLE B.20a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE OUEST
CDG: KOUDOUGOU, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Koudougou	427.5	25.9	61.8	237.7	75.8	387.9	1216.7	64
Fara	55.0	3.2	1.9	11.3	0.	14.6	86.1	5
Sabou	36.5	0.	.4	10.1	1.0	32.4	80.4	4
Kokologo	20.2	15.2	1.5	12.7	0.	8.5	58.1	3
Yako	26.0	13.0	.6	0.	2.2	18.3	60.1	3
Nanoro	1.6	0.	3.6	2.8	0.	4.0	12.1	1
Samba	12.7	3.2	1.6	2.2	0.	12.8	32.6	2
Kordié	0.	.0	0.	0.	0.	0.	.0	0
Léo	19.0	7.3	3.0	9.8	2.7	17.5	59.3	3
Ténado	10.2	2.0	14.0	2.3	2.6	16.2	47.3	2
Réo	14.6	.9	0.	3.6	1.1	9.7	30.0	2
Kassou	12.2	4.3	2.8	2.1	0.	5.8	27.2	1
Pouni	21.2	2.1	7.0	2.5	0.	8.7	41.5	2
Kindi	7.4	0.	3.8	2.1	0.	1.7	15.0	1
Bouyounou	28.7	4.1	0.	9.9	0.	2.0	44.7	2
Boura	21.6	4.1	1.0	1.8	0.	1.3	29.8	2
Arbolé	0.	3.2	4.0	5.2	0.	0.	12.4	1
Bourkina	30.8	0.	5.0	5.3	0.	2.3	43.4	2
Niabouri	2.1	0.	0.	0.	0.	0.	2.1	0
To	6.0	0.	0.	0.	0.	0.	6.0	0
Total	753.6	88.3	112.2	321.4	85.4	543.9	1904.8	100
Percent of Total	40	5	6	17	4	29	100	

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TABLE L.20b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE OUEST
CDG: KOUDOUGOU, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Koudougou	376.8	45.9	99.4	360.1	62.9	469.7	1414.8	54
Fara	11.8	0.	3.0	5.0	0.	6.4	26.3	1
Sabou	12.6	13.7	2.3	1.9	0.	14.8	45.2	2
Kokologo	20.3	6.7	3.0	14.4	0.	16.9	61.3	2
Yako	27.7	11.3	12.1	13.0	.8	16.5	81.4	3
Nanoro	25.3	8.0	2.4	15.4	0.	40.0	91.1	3
Samba	9.1	0.	3.0	.6	0.	402.9	415.7	16
Kordié	7.0	0.	0.	0.	0.	2.0	9.0	0
Léo	28.9	0.	9.8	4.2	0.	30.6	73.6	3
Ténado	7.2	.0	3.7	.8	0.	5.2	17.0	1
Réo	16.2	5.0	.4	22.2	0.	12.2	56.0	2
Kassou	6.5	6.6	7.1	.2	0.	4.1	24.5	1
Pouni	10.8	2.0	1.0	1.6	0.	8.4	23.8	1
Kindi	5.5	0.	.2	9.2	0.	10.6	25.5	1
Bouyounou	5.0	6.6	2.0	2.4	0.	9.3	25.3	1
Boura	8.2	0.	2.0	0.	0.	1.7	11.9	0
Arbolé	20.9	0.	5.8	0.	0.	1.2	27.9	1
Bourkina	.1	0.	1.3	2.5	0.	3.3	7.2	0
To	8.0	5.1	2.0	0.	0.	3.1	18.2	1
Oussa	6.1	0.	2.0	1.8	0.	2.7	12.6	0
Niebouré	26.1	5.5	1.0	2.0	0.	2.0	36.7	1
Poa	4.3	2.0	5.3	0.	0.	4.3	15.9	1
Didir	7.0	0.	3.0	6.0	0.	2.5	18.5	1
La Toden	7.0	5.1	7.8	5.0	0.	4.6	29.5	1
Sili	7.0	6.6	3.0	6.0	0.	3.1	25.7	1
Zamo	8.5	0.	2.4	0.	0.	3.3	14.2	1
Sapouy	0.	5.5	0.	0.	0.	1.5	7.0	0
Imassogo	0.	6.8	0.	0.	0.	.6	7.4	0
Total	674.0	142.5	185.1	474.3	63.8	1084.0	2623.6	100
Percent of Total	26	5	7	18	2	41	100	

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TABLE B.21a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: EST
CDG: FADA N'GOURMA, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Fada Siège	215.7	25.5	320.6	72.3	.2	152.2	786.6	64
C.V. Marché Fada	6.1	0.	6.0	0.	0.	17.2	29.3	2
Diapaga	50.9	0.	7.0	0.	0.	25.7	83.7	7
Bogandé	90.4	0.	0.	.7	11.4	.8	103.4	8
Pama	50.5	0.	2.8	4.6	1.4	7.1	66.4	5
Kantchari	10.0	0.	20.4	0.	0.	3.0	33.4	3
Komin Yanga	5.4	0.	0.	0.	0.	0.	5.4	0
Piéla	46.0	0.	0.	0.	2.9	4.2	53.1	4
Bilanga	6.5	0.	0.	0.	0.	1.0	7.5	1
Koalla	18.5	0.	0.	0.	0.	0.	18.5	2
Logobou	11.8	0.	1.1	0.	0.	0.	13.0	1
Matiacoali	0.	0.	12.0	0.	0.	0.	12.0	1
Botou	0.	0.	7.0	0.	0.	0.	7.0	1
Total	511.9	25.5	377.0	77.6	15.9	211.4	1219.5	100
Percent of Total	42	2	31	6	1	17	100	

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TABLE B.21b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: EST
CDG: FADA N'GOURMA, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Fada Siege	762.5	90.5	27.1	67.4	1.5	307.4	1256.4	48
C.V. Marché Fada	.3	0.	.5	2.9	0.	2.6	6.4	0
Diapaga	283.5	0.	0.	20.2	0.	19.6	323.4	12
Bogandé	47.8	0.	.1	0.	0.	5.3	53.3	2
Pama	61.3	0.	10.6	.4	7.1	3.6	83.1	3
Kantchari	74.8	23.2	5.5	21.7	0.	28.5	153.7	6
Komin Yanga	24.3	0.	2.4	0.	0.	.5	27.2	1
Piéla	39.6	0.	.8	0.	0.	6.0	46.4	2
Bilanga	1.9	0.	.8	0.	0.	2.0	4.8	0
Koalla	2.4	0.	0.	0.	6.6	0.	9.0	0
Logobou	9.3	0.	5.8	0.	0.	.5	15.6	1
Matiacoali	27.0	5.9	0.	18.6	0.	.6	52.1	2
Botou	68.5	33.4	0.	7.0	0.	0.	109.0	4
Namounou	276.1	0.	1.7	21.4	0.	7.0	306.3	12
Bilanga Yanga	11.3	0.	2.9	0.	0.	0.	14.2	1
Korongou	5.4	0.	3.6	0.	0.	0.	9.0	0
Ougarou	5.0	10.2	0.	0.	0.	0.	15.2	1
Yamba	4.7	0.	0.	0.	0.	0.	4.7	0
Gayéri	18.3	15.0	3.1	3.9	0.	.3	40.7	2
Sabra	0.	0.	1.0	0.	0.	0.	1.0	0
Tambaga	10.0	0.	0.	0.	0.	0.	10.0	0
Diabo	12.0	39.9	0.	7.0	0.	0.	58.9	2
Total	1746.2	218.2	66.3	170.6	15.3	384.0	2600.6	100
Percent of Total	67	8	3	7	1	15	100	

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TABLE B.22a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Bobo-Dioulasso	138.3	34.3	71.1	37.0	1568.2	1649.1	3498.3	95
C.V. Eboé (Bobo)	20.0	0.	18.0	23.0	0.	17.5	78.5	2
C.V. Koko (Bobo)	4.0	0.	3.0	15.9	0.	4.7	27.6	1
Chambre de Commerce	0.	0.	0.	0.	0.	1.9	1.9	0
Banfora	8.1	0.	0.1	9.4	0.	70.3	88.0	3
Total	170.5	34.4	92.3	85.4	1568.1	1743.7	3694.4	100
Percent of Total	5	1	2	2	42	47	100	

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TABLE B.22b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Bobo-Dioulasso	531.9	144.7	76.7	183.3	.4	374.3	1311.3	53
C.V. Eboé (Bobo)	49.7	6.0	4.0	2.8	0.	263.3	325.8	13
C.V. Koko (Bobo)	67.4	6.0	4.0	32.8	0.	223.4	333.6	13
BRD. Revolution	0.	0.	0.	15.6	0.	10.1	25.7	1
Banfora	192.5	23.5	.5	36.0	0.	182.4	435.1	18
C.V. Toussiana	31.0	8.0	0.	0.	0.	3.0	42.0	2
Total	872.5	188.2	85.2	270.5	.4	1056.5	2473.5	100
Percent of Total	35	8	3	11	0	43	100	

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TABLE B.23a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: SAHEL
CDG: DORI, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Dori	393.0	874.1	71.7	24.8	387.9	268.5	2020.1	25
C.V. Dori	249.5	0.	0.	86.3	0.	0.	335.8	4
Féd des Eglises	0.	66.6	0.	0.	0.	0.	66.6	1
Djibo	111.2	735.3	13.1	1808.9	474.8	26.0	3169.4	39
Gorom-Gorom	75.0	329.8	0.	106.1	414.5	88.6	1014.0	13
UGVO (Gorom)	26.0	45.3	131.0	0.	0.	38.5	240.9	3
Aribinda	15.8	297.6	10.2	0.	78.9	28.1	430.6	5
Sebba	40.8	.4	.3	31.2	195.6	18.0	286.4	4
Baraboulé	0.	0.	30.0	30.0	60.0	3.0	123.0	2
Markoy	96.2	0.	0.	58.5	0.	0.	154.7	2
Pétégoli	7.0	0.	7.0	7.0	0.	0.	21.0	0
Falagountou	41.9	0.	0.	0.	0.	0.	41.9	1
Nassoumbou	7.0	0.	7.0	7.0	0.	0.	21.0	0
Tondiata	0.	0.	5.0	0.	0.	0.	5.0	0
Bani	60.0	0.	30.0	0.	0.	0.	90.0	1
Déou	63.6	0.	0.	0.	0.	0.	63.6	1
Total	1187.2	2349.0	305.4	2159.9	1611.8	470.8	8084.0	100
Percent of Total	15	29	4	27	20	6	100	

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TABLE B.23b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: SAHEL
CDG: DORI, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Central Dori	616.1	193.1	706.8	209.5	4.9	127.2	1857.5	15
C.V. Dori	1568.9	440.8	116.9	27.6	0.	155.0	2309.3	17
Féd des Eglises	0.	0.	0.	0.	0.	0.	0.	0
Djibo	449.0	241.0	21.0	29.7	7.6	49.8	798.2	6
Gorom-Gorom	1124.2	207.4	701.5	132.8	189.1	135.7	2490.8	19
UGVO (Gorom)	0.	0.	0.	0.	0.	0.	0.	0
Aribinda	854.3	364.8	114.0	78.0	0.	68.9	1480.1	11
Sebba	872.0	184.2	176.0	0.	.3	147.9	1380.4	10
Baraboulé	0.	104.1	0.	0.	0.	0.	104.1	1
Markoy	825.2	21.2	93.4	74.5	27.8	33.5	1075.7	8
Pétégoli	0.	0.	0.	0.	0.	0.	0.	0
Falagountou	202.8	0.	28.0	0.	0.	0.	230.8	2
Nassoumbou	0.	0.	0.	0.	0.	0.	0.	0
Tondiata	0.	0.	0.	0.	0.	0.	0.	0
Bani	276.6	98.1	98.1	0.	0.	7.0	479.8	4
Déou	96.9	0.	47.3	67.0	3.0	0.	214.2	2
Tin-akoff	201.1	20.0	9.5	0.	10.0	0.	240.6	2
Projet Elevage	7.5	0.	7.2	6.0	0.	11.0	31.7	0
Gorgadji	142.0	8.6	21.1	18.8	0.	0.	190.5	1
Tongomayél	139.1	104.1	0.	0.	0.	0.	243.3	2
Pobé-Mengao	0.	78.1	0.	0.	0.	0.	78.1	1
1er ric Dori	0.	0.	0.	15.0	0.	7.0	22.0	0
Yalogo	0.	6.3	0.	0.	0.	0.	6.3	0
Total	7375.7	2072.0	2140.8	658.9	242.8	743.1	13233.4	100
Percent of Total	56	16	16	5	2	6	100	

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TABLE B.24a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: VOLTA NOIRE
CDG: DEDOUGOU, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Dédougou M.C.	26.1	0.	.2	0.	16.9	33.6	76.8	11
C.V. Dédougou	21.7	0.	.0	0.	5.6	61.9	89.2	13
Tougan	172.2	0.	0.	0.	0.	16.5	188.7	26
Boromo	206.4	0.	0.	0.	0.	16.5	222.9	31
Toma	64.0	0.	0.	0.	0.	13.5	77.5	11
Djibasso	4.6	0.	0.	0.	0.	0.	4.6	1
Toéni	5.6	0.	0.	0.	0.	0.	5.6	1
Nouna	1.3	0.	0.	0.	0.	24.6	25.9	4
Kougni	0.	0.	0.	0.	0.	.3	.3	0
Kassoum	19.0	0.	0.	0.	0.	2.0	21.0	3
Solenzo	0.	0.	0.	0.	0.	.3	.3	0
Safané	0.	0.	0.	0.	0.	.1	.1	0
Total	520.9	0.	.2	0.	22.5	169.4	713.0	100
Percent of Total	73	0	0	0	3	24	100	

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TABLE B.24b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: VOLTA NOIRE
CDG: DEDOUGOU, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Dedougou M.C.	652.4	20.0	38.3	468.5	.4	217.4	1397.0	56
C.V. Dedougou	83.0	.1	3.0	47.0	.4	224.3	357.8	14
Tougan	103.2	5.0	9.1	91.3	0.	72.1	280.6	11
Boromo	75.2	0.	0.	13.6	0.	60.4	149.2	6
Toma	39.3	0.	3.4	28.2	0.	23.5	94.3	4
Djibasso	0.	0.	0.	0.	0.	0.	0.	0
Toéni	2.2	0.	0.	0.	0.	0.	2.2	0
Nouna	82.8	0.	6.1	79.1	0.	55.2	223.3	9
Kougni	0.	0.	0.	0.	0.	0.	0.	0
Kassoum	0.	0.	0.	0.	0.	0.	0.	0
Solenzo	0.	0.	0.	0.	0.	0.	0.	0
Safané	.6	0.	0.	0.	0.	0.	.6	0
Kiembara	.5	0.	0.	0.	0.	0.	.5	0
Barani	5.0	0.	0.	0.	0.	0.	5.0	0
Total	1044.3	25.2	59.8	727.6	.8	652.9	2510.6	100
Percent of Total	43	1	2	29	0	26	100	

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TABLE B.25a

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: YATENGA
CDG: OUAHIGOUYA, 1982-83
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Ouahigouya	640.9	1705.8	3.0	1415.0	749.4	292.3	4806.3	28
C.V. Marché (Ouahigouya)	0.	363.5	0.	1780.9	0.	61.7	2206.1	13
Titao	100.4	412.9	7.0	1162.4	94.9	32.1	1809.7	10
Tiou	69.6	386.9	87.0	770.2	132.6	38.0	1484.3	8
Ban	84.6	255.9	0.	206.6	0.	4.9	552.1	3
Séguénéga	499.1	375.2	0.	1229.7	20.9	17.1	2141.9	12
Gourcy	773.6	267.7	0.	785.8	.0	13.1	1840.3	10
Koumbri	200.0	36.1	5.0	94.5	0.	0.	335.6	2
Bérenga	0.	0.	0.	66.4	0.	0.	66.4	0
Solé	0.	300.2	0.	177.0	0.	14.5	491.7	3
Ouindigui	0.	88.4	0.	94.5	2.1	4.3	189.4	1
Kossouka	0.	80.3	0.	57.0	0.	0.	137.3	1
Lago	0.	0.	0.	65.0	0.	0.	65.0	0
Lilkana	0.	0.	0.	78.0	0.	0.	78.0	0
Ingané	0.	80.7	0.	38.8	0.	1.9	121.4	1
Boussouma	0.	0.	0.	10.0	0.	0.	10.0	0
Kalsaka	212.3	37.9	0.	77.7	0.	0.	328.0	2
Ziga	0.	0.	0.	18.0	0.	1.6	19.6	0
Hippo	0.	0.	0.	24.5	0.	0.	24.5	0
Margo	0.	0.	0.	20.0	0.	0.	20.0	0
Barga	0.	0.	0.	12.9	0.	0.	12.9	0
Mené	0.	0.	0.	14.0	0.	0.	14.0	0
Zogoré	18.7	46.7	0.	39.0	0.	0.	104.4	1
Namissiguima	97.0	22.1	2.0	7.0	0.	0.	128.1	1
Tangaye	59.0	0.	2.5	0.	0.	0.	61.5	0
Kaïn	18.5	28.0	0.	40.0	0.	0.	86.5	0
Oula	114.8	0.	3.9	0.	0.	0	118.7	1
Baraboulé	12.0	0.	0.	0.	0.	0.	12.0	0
Djibo	52.3	0.	152.0	.5	0.	0.	204.8	1
Tongomayél	133.7	0.	0.	0.	0.	0.	133.7	1
Total	3086.6	4488.3	262.4	8285.5	1000.0	481.7	17604.5	100
Percent of Total	18	25	1	47	6	3	100	

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TABLE B.25b

OFNACER REGIONAL SALES OF DIFFERENT GRAINS FOR INDIVIDUAL SUBCENTERS

ORD: YATENGA
CDG: OUAHIGOUYA, 1983-84
(metric tons)

	White Sorghum	Red Sorghum	Millet	Corn	Spoil-age	Rice	Total	Percent of Total
Mag. Ouahigouya	629.1	1019.1	40.0	607.1	275.2	477.2	3047.7	28
C.V. Marché (Ouahigouya)	357.6	1503.0	0.	190.5	.1	147.0	2198.2	20
Titao	155.2	648.6	0.	257.6	11.2	63.2	1135.8	10
Tiou	119.4	444.9	0.	134.4	.3	52.0	751.0	7
Ban	48.7	81.6	0.	.6	.5	3.7	135.1	1
Séquénéga	201.6	492.2	0.	93.7	15.8	29.4	832.7	8
Gourcy	118.7	420.9	0.	112.4	.1	41.4	693.7	6
Koumbri	27.8	164.8	0.	95.3	2.8	0.	290.7	3
Solé	0.	43.3	0.	0.	0.	3.9	47.3	0
Ouindigui	0.	12.7	0.	0.	0.	.4	13.2	0
Kossouka	0.	.5	0.	0.	0.	0.	.5	0
Ingané	0.	3.8	0.	0.	0.	6.9	10.7	0
Zogore	.2	108.7	0.	0.	0.	0.	109.0	1
Namissiguima	24.3	123.8	0.	0.	0.	0.	148.1	1
Tangaye	26.3	81.1	0.	0.	0.	0.	107.4	1
Kaïn	0.	30.3	0.	17.5	0.	0.	47.8	0
Oula	24.4	73.2	0.	0.	0.	0.	97.6	1
Tongomayél	18.8	0.	0.	0.	0.	0.	18.8	0
Tougou	.2	27.1	0.	0.	0.	0.	27.3	0
Kalo	0.	35.5	0.	0.	0.	0.	35.5	0
Djibo	217.3	383.8	0.	396.0	0.	43.8	1041.0	9
Total	2009.2	5844.6	40.0	1958.2	306.0	874.2	11032.1	100
Percent of Total	18	53	0	18	3	8	100	

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TABLE B.26a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: BOUGOURIBA
CDG: GAOUA, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
CDSA Gaoua	3.3	7.3	9.1	2.0	5.7	7.4	5.5	6.4	14.4	30.8	132.7	89.8	314.6	41
Diébougou	1.0	.2	.5	12.0	40.0	14.1	3.2	2.0	38.6	22.2	66.8	41.9	262.6	34
Dano	0.	.6	.6	.8	.6	.5	.9	1.3	3.4	6.1	25.9	39.6	80.4	10
Kampti	3.2	2.6	2.9	3.6	4.8	.6	1.8	3.1	10.8	2.2	.1	2.8	38.7	5
Dissin	.5	.3	.3	.1	.4	.5	1.0	1.9	1.9	2.3	12.4	26.5	48.2	6
Batié	.2	.1	.6	1.3	1.1	2.0	2.3	3.4	5.9	9.8	2.9	2.1	31.9	4
Total	8.3	11.2	14.1	19.9	52.6	25.2	14.7	18.2	75.0	73.6	260.9	202.7	776.4	100
Percent of Total	1	1	2	3	7	3	2	2	10	9	34	26	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.26b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: BOUGOURIBA
CDG: GAOUA, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
CDSA Gaoua	49.4	56.8	30.7	19.2	33.0	67.4	67.1	80.3	90.6	132.1	20.8	12.5	659.8	46
Diébougou	62.2	20.3	25.0	7.4	28.0	27.0	25.6	39.3	9.5	18.9	30.7	51.3	345.4	24
Dano	19.3	3.8	2.2	.5	1.2	2.8	1.5	1.7	13.3	10.8	13.6	10.6	81.4	6
Kampti	7.9	15.4	3.3	1.8	5.6	6.6	7.4	22.6	2.6	0.	10.0	.2	83.5	6
Dissin	10.0	2.8	2.7	1.8	1.9	4.1	10.7	11.5	2.5	7.4	10.7	.5	66.5	5
Batié	6.7	9.3	3.5	.4	1.9	9.4	8.0	16.2	6.7	30.3	25.4	6.0	123.8	9
Loropeni	0.	0.	0.	0.	11.3	1.4	2.3	.1	0.	9.1	12.9	1.0	38.2	3
Nako	0.	0.	0.	0.	0.	0.	2.1	0.	0.	.5	3.4	14.6	20.6	1
Legmouin	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.7	1.2	0.	9.9	1
Total	155.5	108.4	67.4	31.2	83.0	118.8	124.8	171.7	125.2	217.8	128.6	96.7	1429.0	100
Percent of Total	11	8	5	2	6	8	9	12	9	15	9	7	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.27a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE
CDG: OUAGADOUGOU, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Ouagadougou Centers:														
Mag. Central (Ouagadougou)	71.5	104.8	63.3	76.8	223.6	158.3	840.1	239.3	693.6	1816.2	1348.7	3018.3	8654.5	57
C.V. Direction Ouagadougou	27.3	36.7	54.1	37.8	29.2	52.9	101.4	139.9	363.7	265.7	553.9	787.3	2450.2	16
Nouveau Centre	0.	0.	0.	0.	0.	0.	6.8	1.4	44.4	119.8	149.1	124.1	445.7	3
Paspanga	.3	.9	.1	0.	0.	0.	0.	2.8	1.1	26.7	73.0	86.5	191.4	1
Dassasgo	.3	0.	0	0.	0.	0.	0.	0.	2.6	6.8	44.5	55.3	109.5	1
Baskuy	1.1	5.6	4.4	3.4	4.0	4.3	5.8	2.5	11.6	36.6	82.6	70.0	232.1	2
Larlé Yaar	2.5	2.9	1.1	4.3	2.7	6.1	10.5	10.0	18.2	57.9	104.0	123.5	343.8	2
Nab-Rnaga	2.1	1.8	3.5	4.6	4.5	4.1	8.6	5.0	24.0	65.7	106.8	95.5	326.5	2
Marché Central	3.7	.9	2.6	.9	.4	6.1	.1	0.	0.	0.	0.	0.	14.8	0
Sankaryaré	1.4	2.7	5.9	2.2	2.4	5.2	6.6	7.6	27.7	51.6	89.9	56.1	259.5	2
Cissin	2.3	2.2	3.9	2.4	3.2	4.6	5.6	2.4	6.0	45.0	71.7	86.0	235.5	2
Gounghin	2.1	2.1	5.3	7.2	8.1	0.	10.3	5.9	18.3	83.0	108.6	117.6	368.7	2
Tanghin Barrage	3.4	2.7	9.9	9.6	5.5	16.9	4.3	9.5	15.6	23.7	95.7	55.5	252.2	2
Zogona	1.5	2.6	2.5	2.7	2.7	3.9	3.6	2.2	14.7	33.5	80.7	75.2	226.0	1
Zangoétin	2.6	4.4	4.1	3.8	3.7	8.5	3.6	8.5	24.0	59.7	101.7	45.6	270.2	2
Kombissiri	.0	0.	.0	0.	.3	.1	0.	0.	.4	0.	0.	0.	.9	0
Pô	1.8	4.6	3.4	2.0	4.1	3.8	6.1	58.4	74.8	90.0	94.7	62.2	405.9	3
Sabsé	.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.2	0
Ziniaré	0.	0.	0.	0.	0.	1.5	10.3	1.6	5.4	26.6	27.2	23.0	97.7	1
Boussé	0.	0.	0.	0.	0.	0.	0.	0.	.3	19.5	27.5	12.6	59.9	0
Saponé	0.	0.	0.	0	0.	0.	0.	0.	5.3	17.3	26.5	18.9	68.1	0
Tanguin-Dassouri	0.	0.	0.	0.	0.	0.	0.	0.	0.	12.5	20.4	47.8	80.7	1
Ourgou/Lindi	2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0	0
Total	126.4	175.1	164.3	158.0	294.[illegible]	276.4	1023.9	497.2	1351.8	2859.9	3207.4	4961.1	15096.[illegible]	100
Percent of Total	1	1	1	1	2	2	7	3	9	19	21	33	100	

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TABLE B.27b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE
CDG: OUAGADOUGOU, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Ouagadougou Centers:														
Mag. Central (Ouagadougou)	657.9	667.7	375.7	237.2	503.1	734.0	786.4	385.5	1041.3	1226.9	1621.2	952.2	9189.1	49
C.V. Direction Ouagadougou	250.7	335.2	85.5	115.3	134.0	341.3	125.2	1464.8	195.8	263.2	475.6	364.1	4150.8	22
Nouveau Centre	56.9	55.6	22.0	5.7	11.4	15.1	8.1	30.3	38.5	41.9	164.4	74.0	523.9	3
Paspanga	83.9	25.9	19.7	11.5	13.8	19.8	22.6	20.3	24.3	21.7	81.7	29.9	375.0	2
Dassasgo	77.2	27.3	4.3	0.	0.	0.	9.0	4.6	28.2	31.3	67.2	15.0	264.2	1
Baskuy	53.3	31.5	22.6	9.4	6.5	16.1	0.	0.	0.	.2	30.1	59.9	229.6	1
Larlé Yaar	127.0	55.1	13.4	10.3	13.2	8.2	34.4	10.9	12.0	6.7	157.8	112.4	561.4	3
Nab-Rhaga	81.0	46.7	22.0	6.1	14.6	18.3	16.5	2.4	6.5	27.6	8.2	54.6	304.7	2
Sankaryaré	69.1	34.2	5.2	14.1	14.8	17.1	18.4	7.2	12.1	25.3	44.8	58.2	320.6	2
Cissin	76.0	33.2	22.0	13.9	15.6	14.0	3.5	0.	7.0	20.5	68.1	48.0	321.9	2
Gounghin	108.4	53.6	24.2	0.	0.	0.	19.3	10.7	16.8	49.5	48.1	45.1	375.5	2
Tanghin Barrage	37.6	43.0	6.6	5.8	22.7	43.7	58.1	28.0	49.0	84.0	153.4	110.3	642.1	3
Zogona	101.1	3.2	11.1	8.7	20.5	18.1	0.	4.3	26.3	30.9	76.0	55.8	355.9	2
Zangoetin	80.0	40.7	24.5	9.4	26.6	18.6	25.0	18.3	31.4	38.8	39.4	51.9	404.5	2
Kombissiri	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	30.0	105.7	135.7	1
Pô	25.9	8.4	9.6	14.3	18.0	34.2	51.7	25.2	34.8	38.1	42.1	15.1	317.6	2
Ziniaré	5.8	8.0	6.5	2.6	8.4	27.9	0.	13.1	1.4	19.0	1.9	1.6	96.2	1
Boussé	5.9	.9	5.6	4.4	4.8	21.8	0.	10.7	15.3	2.2	.1	0.	71.9	0
Saponé	4.7	8.5	8.6	11.9	9.0	16.2	13.5	5.3	16.2	38.3	75.0	29.1	236.8	1
Tanguin-Dassouri	24.5	0.	0.	.7	0.	0.	0.	.1	0.	0.	0.	.4	25.7	0
Total	1927.1	1478.7	689.1	481.5	837.0	1364.6	1191.8	2042.5	1557.0	1966.1	3184.8	2183.4	18903.4	100
Percent of Total	10	8	4	3	4	7	6	11	8	10	17	12	100	

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TABLE B.28a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE EST
CDG: KOUPELA, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Koupéla	2.4	4.7	2.5	.9	0.8	1.5	2.4	9.9	8.9	8.7	60.6	170.1	273.4	29
Tenkodogo	3.0	2.3	2.2	2.4	2.2	4.4	2.4	5.4	8.9	16.5	160.9	45.6	256.6	27
Zabré	0.	0.	.8	0.	1.6	0.	1.5	0.	8.7	76.2	90.0	159.2	338.2	36
Garango	.8	1.7	2.8	2.9	2.7	2.7	9.9	10.6	0.	2.1	0.	0.	36.4	4
Zorgo	1.5	.8	0.	0.	0.	0.	0.	0.	.4	1.0	14.8	.9	19.4	2
Gomboussougou	0.	0.	0.	0.	0.	0.	.5	0.	1.4	1.6	3.3	0.	6.7	1
Bitou	0.	0.	0.	0.	0.	0.	0.	1.8	3.1	5.0	.6	0.	10.5	1
Total	7.8	9.5	8.4	6.3	7.3	8.6	16.8	27.8	31.5	111.2	330.3	375.8	941.3	100
Percent of Total	1	1	1	1	1	1	2	3	3	12	35	40	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.28b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE EST
CDG: KOUPELA, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Koupéla	0.	0.	8.3	0.	5.9	3.8	30.4	28.0	139.1	213.9	104.2	79.4	613.0	31
Tenkodogo	19.5	11.7	9.4	0.	6.9	10.7	31.5	31.2	48.3	56.0	113.5	38.3	377.2	19
Zabré	159.2	1.5	.5	0.	1.3	4.0	1.6	2.9	16.2	12.7	29.0	7.6	236.7	12
Garango	12.7	5.6	0.	0.	2.1	5.7	11.1	16.7	16.7	34.8	26.3	31.8	163.5	8
Zorgo	3.9	0.	2.8	0.	0.	4.5	2.0	2.6	42.6	53.1	69.8	31.0	212.3	11
Gomboussougou	.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.3	0
Méguet	0.	0.	0.	0.	0.	0.	0.	2.4	2.4	9.2	.2	24.1	38.3	2
Gouguin	0.	0.	0.	0.	0.	0.	0.	1.7	10.8	1.8	10.7	31.2	56.2	3
Moktédo	0.	0.	0.	0.	0.	0.	0.	0.	0.	26.4	0.	.6	27.0	1
Ouargaye	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.0	16.3	27.3	1
CDR Koupéla	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	19.3	19.3	1
Zam	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.3	23.3	1
Boulsa	0.	0.	0.	0.	0.	0.	0.	0.	0.	53.3	21.4	97.4	172.2	9
Total	195.5	18.9	21.0	0.	16.2	28.7	76.6	85.5	276.1	461.3	386.1	400.3	1966.5	100
Percent of Total	10	1	1	0	1	1	4	4	14	23	20	20	100	

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TABLE B.29a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE NORD
CDG: KAYA, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Kaya	2.5	12.7	43.6	5.1	4.4	38.0	104.3	309.3	274.3	58.7	208.7	348.1	1409.8	33
Marché Central Kaya	3.2	5.5	7.6	5.8	7.8	10.6	44.3	47.4	51.9	141.7	145.7	127.8	599.3	14
Kongoussi	3.0	10.2	28.9	93.1	41.1	21.2	54.8	72.1	51.7	17.0	28.5	47.7	469.4	11
Bourzanga	0.	0.	0.	0.	0.	0.	79.6	35.4	85.9	37.8	102.4	9.5	350.7	8
Boulsa	2.0	1.8	4.4	2.5	4.9	11.0	7.0	3.2	11.8	42.2	116.8	81.4	289.2	7
Pissila	.1	.1	0.	0.	0.	1.1	20.3	26.8	24.5	21.9	51.0	32.3	178.1	4
Barsalogo	.5	.2	1.0	.4	.7	3.0	32.8	47.3	27.4	18.7	64.4	32.4	228.7	5
Tikaré	2.9	4.2	2.8	0.	.2	.1	14.1	0.	20.6	25.1	29.3	11.5	110.8	3
Tougouri	.9	.6	0.	0.	.2	.7	2.6	4.0	13.2	0.	74.4	14.9	111.5	3
Yalogo	0.	0.	0.	0.	0.	1.6	18.5	29.5	760	41.1	16.0	0.	182.8	4
Rollo	0.	0.	.7	0.	0.	0.	0.	13.0	39.0	33.0	15.3	0.	101.1	2
Téma	0.	0.	0.	0.	0.	.5	0.	0.	.7	33.8	0.	46.1	81.1	2
Korsimoro	0.	0.	0.	0.	0.	0.	13.4	35.1	15.8	0.	1.5	6.1	72.0	2
Boussouma	0.	0.	0.	0.	0.	0.	0.	15.1	0.	0.	0.	0.	15.1	0
Guibaré	0.	0.	0.	0.	0.	0.	0.	0.	14.0	0.	9.5	0.	23.5	1
Mané	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.5	21.1	32.6	1
Koalla	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.0	13.0	26.0	1
Total	15.1	35.4	89.0	106.9	59.4	87.8	391.8	638.2	706.9	471.1	888.0	792.1	4281.7	100
Percent of Total	0	1	2	2	1	2	9	15	17	11	21	19	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.29b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE NORD
CDG: KAYA, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Kaya	135.9	36.1	81.4	106.7	200.6	358.0	339.4	607.5	533.3	335.6	494.7	465.6	3694.9	38
Marché Central Kaya	81.8	12.2	33.7	18.9	59.5	26.5	0.	0.	0.	0.	0.	0.	232.6	2
Kongoussi	15.8	2.8	3.9	25.2	133.2	207.7	106.8	137.9	239.7	116.5	193.6	184.9	1368.3	14
Bourzanga	0.	9.1	.4	4.9	0.	8.1	48.3	39.0	43.3	33.5	66.4	17.3	270.4	3
Boulsa	8.2	1.6	4.0	3.6	10.3	25.8	20.0	4.5	11.0	0.	0.	0.	89.0	1
Pissila	18.7	.7	13.4	14.8	49.0	14.7	36.3	88.3	50.9	46.1	79.8	90.9	503.8	5
Barsalogo	26.2	14.6	11.9	24.0	51.0	70.4	54.0	68.3	116.0	35.4	171.5	99.5	742.9	8
Tikaré	4.9	.7	0.	.0	11.3	40.1	41.5	13.0	42.4	24.5	.4	51.9	230.8	2
Tougouri	4.0	4.0	0.	9.7	5.1	29.9	18.3	39.5	0.	55.5	20.5	47.0	233.6	2
Yalogo	78.3	0.	9.8	12.5	30.1	102.3	0.	0.	95.6	83.5	14.5	66.3	493.1	5
Rollo	10.5	0.	0.	2.0	.0	12.6	14.9	26.8	0.	40.4	79.4	37.8	224.3	2
Téma	6.9	0.	.9	0.	7.8	3.4	2.2	9.3	23.1	29.5	39.4	98.3	220.9	2
Korsimoro	4.6	0.	2.7	0.	.6	0.	10.4	8.6	11.4	31.0	161.1	77.1	307.6	3
Boussouma	0.	0.	0.	0.	0.	0.	31.3	23.6	28.0	44.9	51.0	98.2	277.1	3
Guibaré	3.2	0.	0.	0.	4.5	0.	26.0	0.	13.0	5.7	1.4	14.1	68.0	1
Mané	23.0	4.2	0.	.8	0.	13.5	8.6	68.1	71.1	43.4	113.5	40.2	386.4	4
Koalla	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Dablo	0.	7.3	6.4	0.	25.0	13.0	13.0	0.	0.	0.	0.	0.	64.7	1
Bélgo	0.	0.	8.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.4	0
Sabsé	0.	0.	0.	4.8	21.3	13.5	39.9	40.7	10.0	30.2	90.2	26.1	276.8	3
Total	422.2	93.4	176.9	228.0	609.6	939.7	811.1	1175.2	1288.9	955.8	1577.5	1415.2	9693.6	100
Percent of Total	4	1	2	2	6	10	8	12	13	10	16	15	100	

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TABLE B.30a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CENTRE OUEST
CDG: KOUDOUGOU, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Koudougou	4.0	4.4	18.1	107.3	86.9	123.7	55.1	46.9	81.8	141.0	319.4	228.0	1216.7	64
Fara	0.	.5	.2	.7	.8	.3	1.0	0.	10.1	20.6	29.4	22.5	86.1	5
Sabou	.7	.5	1.2	1.4	.5	4.4	5.2	1.0	1.4	7.4	30.8	25.8	80.4	4
Kokologo	0.	0.	0.	0.	0.	0.	0.	1.1	7.7	2.7	26.0	20.5	58.1	3
Yako	.5	.6	.1	0.	0.	0.	5.1	1.5	.4	14.5	21.3	15.9	60.1	3
Nanoro	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.6	6.5	12.1	1
Samba	.8	0.	3.2	0.	2.2	0.	0.	5.0	0.	8.3	7.4	5.6	32.6	2
Kordié	.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Léo	0.	2.5	0.	.6	0.	.8	1.3	1.3	13.4	10.5	6.7	22.1	59.3	3
Ténado	0.	0.	2.4	.9	0.	2.6	1.7	1.5	5.9	3.0	17.2	6.9	47.3	2
Réo	0.	0.	.6	2.4	2.1	2.1	6.1	3.4	3.2	5.3	2.8	2.0	30.0	2
Kassou	0.	0.	0.	0.	0.	0.	0.	0.	12.1	7.8	7.4	0.	27.2	1
Pouni	0.	0.	0.	0.	0.	0.	0.	0.	3.0	3.0	22.0	13.5	41.5	2
Kindi	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.1	6.2	5.6	15.0	1
Bouyounou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	13.2	31.5	44.7	2
Boura	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	19.0	10.9	29.8	2
Arbo'é	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	12.4	0.	12.4	1
Bourkina	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	19.3	24.2	43.4	2
Niabouri	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1	2.1	0
To	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.0	6.0	0
Total	6.1	8.7	25.9	113.4	92.5	133.8	75.6	61.9	139.1	232.1	566.2	449.5	1904.8	100
Percent of Total	0	0	1	6	5	7	4	3	7	12	30	24	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.30b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: CE'TRE OUEST
CDG: KOUDOUG'', 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Koudougou	45.9	114.7	144.9	43.1	33.2	59.1	184.0	26.1	91.8	43.6	159.8	468.4	1414.8	54
Fara	5.8	.3	0.	0.	0.	0.	1.3	12.1	0.	0.	6.7	0.	26.3	1
Sabou	2.4	.4	.4	1.0	1.9	.8	4.3	2.4	0.	21.4	9.9	.2	45.2	2
Kokologo	8.3	4.2	0.	3.6	0.	5.8	4.6	2.8	8.9	6.9	2.0	13.2	61.3	2
Yako	15.4	5.5	.2	5.0	0.	0.	1.9	12.0	12.6	7.6	21.1	0.	81.4	3
Nanoro	6.7	0.	1.6	0.	0.	0.	10.2	48.2	0.	7.3	17.1	0.	91.1	3
Samba	393.7	1.2	.9	2.5	.7	0.	.9	15.6	0.	0.	0.	0.	415.7	16
Kordié	0.	0.	0.	0.	0.	0.	.1	7.8	0.	1.0	0.	0.	9.0	0
Léo	9.0	3.9	.4	1.3	4.4	5.6	6.0	8.8	6.3	6.9	8.6	12.1	73.6	3
Ténado	0.	0.	1.7	0.	0.	0.	1.1	12.1	0.	.9	1.1	0.	17.0	1
Réo	1.0	.5	2.7	0.	.4	4.1	7.4	2.8	.5	4.7	12.3	19.4	56.0	2
Kassou	2.1	0.	0.	0.	0.	0.	0.	15.3	0.	7.1	0.	0.	24.5	1
Pouni	4.2	.8	.8	0.	0.	.2	2.3	10.1	0.	5.3	0.	0.	23.8	1
Kindi	1.1	0.	.2	.4	.3	0.	4.6	0.	2.4	3.3	13.0	0.	25.5	1
Bouyounou	8.9	0.	0.	0.	0.	0.	0.	9.2	0.	7.2	0.	0.	25.3	1
Boura	.8	0.	0.	0.	0.	0.	0.	11.1	0.	0.	0.	0.	11.9	0
Arbolé	0.	0.	0.	0.	0.	11.1	0.	3.9	0.	7.0	.9	0.	27.9	1
Bourkina	5.2	2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2	0
To	1.0	0.	0.	0.	0.	0.	0.	10.2	0.	7.0	0.	0.	18.2	1
Ouessa	2.6	0.	.3	0.	0.	0.	0.	8.2	0.	1.5	0.	0.	12.6	0
Niabouri	1.1	0.	0.	0.	0.	0.	0.	30.0	0.	5.5	0.	0.	36.7	1
Poa	0.	0.	0.	0.	0.	0.	0.	4.6	0.	11.3	0.	0.	15.9	1
Didir	0.	0.	0.	0.	0.	0.	0.	11.5	0.	0.	7.0	0.	18.5	1
Latodin	0.	0.	0.	0.	0.	0.	0.	10.5	0.	12.9	6.0	0.	29.5	1
Sili	0.	0.	0.	0.	0.	0.	0.	11.5	0.	7.2	7.0	0.	25.7	1
Zamo	0.	0.	0.	0.	0.	0.	0.	6.5	0.	7.7	0.	0.	14.2	1
Sapouy	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.0	0.	0.	7.0	0
Imassogo	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.4	0.	7.4	0
Total	515.4	133.8	154.3	57.0	41.0	86.8	228.8	298.7	122.7	191.4	280.1	513.4	2623.6	100
Percent of Total	20	5	6	2	2	3	9	11	5	7	11	20	100	

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TABLE B.31a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: EST
ORD: FADA N'GOURMA, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Fada Siège	5.1	26.1	13.2	25.6	31.6	26.5	14.8	24.4	17.9	42.5	374.1	184.5	786.6	64
C.V. Marché Fada	3.6	9.1	0.	0.	0.	0.	0.	0.	.1	8.0	8.5	0.	29.3	2
Diapaga	0.	0.	0.	0.	0.	1.9	0.	2.1	18.4	3.8	14.6	42.9	83.7	7
Bogandé	0.	.2	0.	0.	0.	0.	0.	1.4	0.	11.9	57.4	32.3	103.4	8
Pama	6.5	0.	0.	0.	7.5	0.	12.1	0.	0.	40.3	0.	0.	66.4	5
Kantchari	11.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.3	14.7	33.4	3
Komin Yanga	0.	3.3	0.	0.	0.	0.	0.	0.	0.	0.	2.0	0.	5.4	0
Piéla	0.	1.6	0.	0.	0.	0.	0.	0.	2.1	13.8	33.5	2.0	58.1	4
Bilanga	0.	0.	0.	0.	.3	0.	0.	0.	0.	0.	.7	6.5	7.5	1
Koalla	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.1	12.0	3.3	18.5	2
Logobou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.8	1.1	13.0	1
Matiacoali	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.0	5.0	12.0	1
Botou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.0	7.0	1
Total	26.6	40.4	13.2	25.6	39.4	28.4	26.9	28.0	38.6	123.5	529.0	299.5	1219.5	100
Percent of Total	2	3	1	2	3	2	2	2	3	10	43	25	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.31b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: EST
CDG: FADA N'GOURMA, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Fada Siège	123.7	65.0	25.5	9.7	13.1	128.3	97.1	23.5	53.3	84.3	436.1	196.7	1256.4	48
C.V. Marché Fada	4.9	.4	1.1	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4	0
Diapaga	34.3	6.7	2.8	.2	0.	0.	0.	3.3	14.4	217.4	20.2	24.0	323.4	2
Bogandé	4.0	.8	.2	0.	1.4	9.5	8.0	8.3	4.9	4.5	11.6	0.	53.3	2
Pama	0.	9.5	2.1	0.	0.	1.0	15.4	0.	.6	.5	2.9	51.1	83.1	3
Kantchari	14.0	15.9	1.4	3.6	1.8	0.	5.9	14.4	12.2	27.5	23.9	33.0	153.7	6
Komin Yanga	0.	0.	0.	0.	0.	0.	0.	.9	11.1	4.6	2.7	7.9	27.2	1
Piéla	6.9	0.	0.	0.	0.	0.	0.	0.	0.	19.6	19.9	0.	46.4	2
Bilanga	2.5	.3	1.8	0.	0.	0.	.2	0.	0.	0.	0.	0.	4.8	0
Koalla	0.	.8	8.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0	0
Logobou	4.1	1.5	.6	0.	0.	0.	0.	0.	2.0	0.	5.5	1.8	15.6	1
Matiacoali	17.0	3.0	.4	0.	0.	0.	.1	3.6	1.9	5.9	0.	20.0	52.1	2
Botou	6.8	3.5	0.	1.0	3.9	.3	9.1	10.6	0.	26.4	18.3	29.0	109.0	4
Namounou	280.1	0.	4.0	0.	0.	0.	1.7	3.4	0.	0.	0.	17.1	306.3	12
Bilanga Yanga	8.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2	1.8	14.2	1
Korongou	9.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0	0
Ougarou	5.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.9	2.3	15.2	1
Yamba	0.	3.3	1.4	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7	0
Gayéri	0.	0.	.6	0.	0.	0.	3.6	4.3	10.1	14.3	0.	7.7	40.7	2
Sabra	0.	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0	0
Tambaga	0.	0.	0.	0.	0.	0.	0.	0.	.4	0.	8.3	1.3	10.0	0
Diabo	0.	0.	0.	0.	0.	0.	0.	0.	0.	33.4	10.0	15.5	58.9	2
Total	520.8	110.7	51.4	14.6	20.2	139.0	141.2	72.5	111.1	438.4	571.6	409.3	2600.6	100
Percent of Total	20	4	2	1	1	5	5	3	4	17	22	16	100	

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TABLE B.32a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Bobo-Dioulasso	30.0	24.3	51.9	20.1	6.1	691.5	204.4	304.6	887.8	16.0	1083.8	177.4	3498.3	95
C.V. Eboe(Bobo)	0.	0.	0.	0.	0.	.1	0.	3.4	2.4	2.7	29.0	40.8	78.5	2
C.V. Koko(Bobo)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	27.6	27.6	1
Chambre de Commerce	.6	.3	0.	1.0	0.	0.	0.	0.	0.	0.	0.	0.	1.9	0
Banfora	59.0	.2	.7	.9	1.3	.7	1.5	.5	.3	.2	8.1	14.4	88.0	3
Total	89.6	24.8	52.7	22.2	7.5	692.3	205.9	308.5	890.6	18.9	1121.0	260.3	3694.4	100
Percent of Total	2	1	1	1	0	19	6	8	24	1	30	7	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.32b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: HAUTS-BASSINS
CDG: BOBO-DIOULASSO, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Bobo-Dioulasso	0.	183.8	33.8	17.3	38.9	51.8	22.9	211.0	225.5	240.8	180.8	104.5	1311.3	53
C.V. Eboe(Bobo)	0.	66.5	39.7	2.6	1.6	.4	5.0	36.7	86.0	19.0	51.2	17.1	325.8	13
C.V. Koko(Bobo)	0.	71.3	57.3	.6	10.9	5.5	6.0	27.8	73.8	14.0	26.6	39.7	333.6	13
BRD. Revolution	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.1	17.6	25.7	1
Banfora	0.	28.2	42.3	10.9	16.8	29.1	27.0	37.2	71.3	71.4	70.3	30.5	435.1	18
C.V. Toussiana	0.	0.	0.	0.	0.	11.4	4.6	13.7	9.8	2.4	0.	0.	42.0	2
Total	0.	349.7	173.2	31.5	68.1	98.2	65.7	326.4	466.5	347.7	337.1	209.5	2473.5	100
Percent of Total	0	14	7	1	3	4	3	13	19	14	14	8	100	

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TABLE B.33a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: SAHEL
CDG: DORI, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Dori	0.	10.9	10.8	12.5	17.4	53.9	120.7	324.5	360.2	434.4	401.3	273.5	2020.1	25
C.V. Dori	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	214.0	121.8	335.8	4
Féd des Eglises	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	66.6	66.6	1
Djibo	144.3	376.6	236.8	335.8	259.2	304.6	253.0	434.3	39.9	318.6	387.2	79.2	3169.4	39
Gorom-Gorom	5.3	5.3	5.5	0.	12.8	19.8	64.6	178.1	191.9	235.8	99.0	195.8	1014.0	13
UGVO (Gorom)	0.	0.	0.	0.	0.	0.	0.	0.	0.	163.8	0.	77.0	240.9	3
Aribinda	1.5	.5	.9	.4	20.8	10.9	2.3	47.8	209.9	15.0	31.6	89.1	430.6	5
Sebba	1.9	3.3	1.1	3.9	3.7	2.1	2.8	14.9	0.	21.4	166.0	65.0	286.4	4
Baraboulé	0.	0.	0.	123.0	0.	0.	0.	0.	0.	0.	0.	0.	123.0	2
Markoy	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	154.7	154.7	2
Pétégoli	0.	0.	0.	21.0	0.	0.	0.	0.	0.	0.	0.	0.	21.0	0
Falagountou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	41.9	0.	41.9	1
Nassoumbou	0.	0.	0.	21.0	0.	0.	0.	0.	0.	0.	0.	0.	21.0	0
Tondiata	0.	0.	0.	5.0	0.	0.	0.	0.	0.	0.	0.	0.	5.0	0
Bani	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	90.0	0.	90.0	1
Déou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	63.6	63.6	1
Total	153.1	396.6	255.1	522.7	313.9	391.4	443.4	999.6	801.9	1189.0	1430.9	1186.4	8084.0	100
Percent of Total	2	5	3	6	4	5	5	12	10	15	18	15	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.33b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: SAHEL
CDG: DORI, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central Dori	13.0	115.4	160.4	16.2	172.7	120.8	224.1	251.3	512.3	66.7	110.8	93.7	1857.5	15
C.V. Dori	114.3	65.5	164.6	208.1	206.3	210.1	357.4	472.0	143.6	234.5	104.5	26.3	2309.3	17
Mag. Central Djibo	95.3	10.5	10.1	15.4	45.2	120.7	147.3	127.5	226.2	0.	0.	0.	798.2	6
Gorom-Gorom	90.2	152.7	169.7	87.5	152.9	183.8	275.5	422.7	525.0	307.4	97.9	25.5	2490.8	19
UGVO (Gorom)	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Aribinda	85.3	14.7	101.3	103.6	164.9	243.1	224.9	244.3	153.6	43.8	100.5	0.	1480.1	11
Sebba	6.1	11.5	13.4	30.4	95.7	201.8	150.3	297.2	246.8	314.8	6.4	6.0	1380.4	10
Barabouié	0.	0.	0.	0.	0.	0.	0.	0.	104.1	0.	0.	0.	104.1	1
Markoy	10.0	6.5	64.7	95.7	128.0	110.1	175.1	144.0	228.1	67.4	24.7	21.3	1075.7	8
Pétégoli	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Falagountou	0.	0.	0.	24.0	0.	0.	82.8	110.0	14.0	0.	0.	0.	230.8	2
Nassoumbou	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Tondiata	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Bani	0.	0.	0.	11.0	119.0	50.0	89.1	84.6	63.0	40.1	0.	20.0	479.8	4
Déou	44.1	0.	70.0	0.	0.	0.	0.	100.1	0.	0.	0.	0.	214.2	2
Tin-akoff	55.4	0.	20.0	48.7	8.0	8.0	100.5	0.	0.	0.	0.	0.	240.6	2
Projet Elevage	0.	0.	31.7	0.	0.	0.	0.	0.	0.	0.	0.	0.	31.7	0
Gorgadji	0.	0.	0.	37.4	0.	0.	50.0	103.1	0.	0.	0.	0	190.5	1
Tongomayel	0.	0.	0.	0.	0.	45.0	91.1	3.0	104.1	0.	0.	0.	243.3	2
Pobé-Mengao	0.	0.	0.	0.	0.	0.	0.	0.	78.1	0.	0.	0.	78.1	1
1er Ric Dori	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	22.0	22.0	0
Yalogo	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.3	0.	6.3	0
Total	513.7	376.8	805.9	681.1	1092.8	1293.4	1968.0	2359.7	2399.0	1074.8	451.1	216.9	13233.4	100
Percent of Total	4	3	6	5	8	10	15	18	18	8	3	2	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.34a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: VOLTA NOIRE
CDG: DEDOUGOU, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Dédougou M.C.	0.	0.	0.	1.4	.7	0.	0.	17.8	1.4	22.7	32.6	0.	76.8	1
C.V. Dédougou	2.4	3.3	1.6	.3	0.	1.6	3.4	0.	23.2	0.	0.	53.4	89.2	13
Tougan	.1	.2	0.	0.	0.	0.	0.	0.	18.0	14.3	102.8	53.3	188.7	26
Boromo	.3	1.0	.1	0.	0.	0.	0.	0.	3.4	27.4	101.9	88.6	222.9	31
Toma	.2	.3	.3	0.	0.	0.	0.	0.	18.0	18.7	30.7	9.2	77.5	11
Djibasso	.5	0.	0.	4.1	0.	0.	0.	0.	0.	0.	0.	0.	4.6	1
Toéni	.6	0.	0.	0.	0.	0.	0.	1.0	0.	4.0	0.	0.	5.6	1
Nouna	.3	.3	2.1	0.	.4	.1	.3	.3	.1	20.0	1.3	.6	25.9	4
Kougni	.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.3	0
Kassoum	1.0	1.7	0.	18.2	0.	0.	0.	0.	0.	0.	0.	0.	21.0	3
Solenzo	.3	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.3	0
Safané	0.	0.	.0	0.	0.	.1	0.	0.	0.	0.	0.	0.	.1	0
Total	6.1	6.9	4.3	24.1	1.1	1.9	3.7	19.2	64.2	107.1	269.4	205.1	713.0	100
Percent of Total	1	1	1	3	0	0	1	3	9	15	38	29	100	

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE B.34b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: VOLTA NOIRE
CDG: DEDOUGOU, 198[illegible]-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Dédougou M.C.	30.8	35.7	1.0	9.2	.7	19.1	115.8	208.0	180.3	137.9	193.7	464.9	1397.0	56
C.V. Dédougou	0.	30.8	42.2	12.4	25.9	26.2	29.9	16.9	0.	31.0	51.6	90.8	357.8	14
Tougan	11.1	8.9	5.9	2.7	3.2	3.2	4.8	28.8	35.8	32.5	40.3	103.4	280.6	11
Boromo	24.2	9.0	5.9	5.1	5.7	10.4	8.3	10.5	11.4	12.6	26.5	19.5	149.2	6
Toma	5.9	2.1	3.1	0.	0.	0.	4.8	17.3	8.3	9.3	9.8	34.0	94.3	4
Djibasso	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Toéni	0.	0.	0.	0.	0.	2.2	0.	0.	0.	0.	0.	0.	2.2	0
Nouna	1.0	3.6	6.9	2.1	2.8	0.	8.6	8.0	24.0	33.7	51.5	80.7	223.3	9
Kougni	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Kassoum	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Solenzo	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Safané	0.	.6	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	.6	0
Kiembara	0.	0.	0.	.5	0.	0.	0.	0.	0.	0.	0.	0.	.5	0
Barani	0.	0.	0.	0.	0.	5.0	0.	0.	0.	0.	0.	0.	5.0	0
Total	73.1	91.1	64.9	32.0	38.3	66.2	172.3	289.2	259.8	257.0	373.4	793.3	2510.6	100
Percent of Total	3	4	3	1	2	3	7	12	10	10	15	32	100	

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TABLE B.35a

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: YATENGA
CDG: OUAHIGOUYA, 1982-83
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central (Ouahigouya)	13.2	0.	153.0	49.0	154.0	175.4	808.4	413.8	974.9	203.4	518.2	1342.9	4806.3	28
C.V. Marché (Ouahigouya)	3.7	0.	201.3	191.7	273.6	263.7	217.4	133.3	64.0	265.8	331.9	209.6	2206.1	13
Titao	24.6	0	109.7	81.4	126.9	114.9	231.7	242.1	205.6	153.9	256.6	262.3	1809.7	10
Tiou	2.1	0.	69.4	49.4	99.9	137.5	185.3	86.2	96.7	132.3	199.7	405.8	1484.3	8
Ban	1.3	0	1.0	12.7	39.6	13.1	121.0	76.7	43.4	51.7	72.8	88.7	552.1	3
Séguénéga	.3	0.	122.1	83.4	255.3	280.5	199.6	97.3	153.3	165.1	245.5	538.4	2141.9	12
Gourcy	.3	0.	37.0	62.3	10.7	229.3	234.5	109.3	103.4	61.8	154.6	837.1	1840.3	10
Koumbri	0	0	3.5	8.5	13.5	30.8	5.5	0.	11.1	10.4	34.2	218.0	335.6	2
Borenga	0.	0	0	0.	33.4	0.	33.0	0.	0.	0.	0	0.	66.4	0
Solé	0.	0.	48.8	43.8	38.5	66.5	75.2	54.3	63.3	46.1	38.0	22.3	491.7	3
Ouindigui	0.	0.	0.	0.	4.7	17.7	37.8	50.3	68.7	7.3	2.9	0.	189.4	1
Kossouka	0.	0.	0.	0.	13.0	0.	44.0	14.3	20.0	0.	0.	46.0	137.3	1
Lago	0.	0	0.	0	13.0	26.0	26.0	0	0.	0	0.	0	65.0	0
Lilkana	0	0.	0.	0	38.9	26.0	13.0	0.	0.	0.	0	0.	78.0	0
Ingané	0.	0.	0.	0.	0.	22.7	17.1	19.6	6.6	3.6	47.4	4.5	121.4	1
Boussouma	0	0.	0.	0.	0.	3.3	6.7	0	0.	0	0	0.	10.0	0
Kalsaka	0.	0.	0.	0.	0.	34.6	31.4	0	0.	24.3	13.6	224.1	328.0	2
Ziga	0.	0.	0.	0.	0	5.0	14.6	0.	0.	0.	0.	0.	19.6	0
Hippo	0.	0.	0.	0.	0.	5.5	19.0	0.	0.	0.	0.	0.	24.5	0
Margo	0.	0.	0.	0.	0.	10.0	10.0	0.	0	0.	0	0.	20.0	0
Barga	0.	0.	0.	0.	0.	0.	2.5	9.8	.6	0.	0.	0.	12.9	0
Mené	0.	0.	0.	0.	0.	0.	14.0	0	0.	0	0	0.	14.0	0
Zogoré	0.	0.	0.	0.	0.	0.	26.0	0.	19.1	20.6	0.	38.7	104.4	1
Namissiguima	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.6	15.5	106.0	128.1	1
Tangaye	0.	0.	0.	0.	0.	0.	0.	0	0.	0	4.5	57.0	61.5	0
Kaïn	0	0.	0.	0.	0	0.	0.	0.	0.	0.	0.	86.5	86.5	0
Oula	0.	0.	0	0.	0.	0.	0.	0.	0.	0	0	118.7	118.7	1
Baraboulé	0.	0.	0.	0.	0.	0.	0	0.	0.	0.	0.	12.0	12.0	0
Djibo	0.	0.	0.	0.	0.	0.	0.	0.	0	0	0.	204.8	204.8	1
Tongomayél	0.	0.	0.	0.	0.	0.	0	0.	0.	0.	0.	133.7	133.7	1
Total	45.5	0.	763.9	582.4	1116.1	1492.7	2373.7	1306.9	1830.9	1152.0	1935.4	5005.0	17604.5	100
Percent of Total	0	0	4	3	6	8	13	7	10	7	11	28	100	

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TABLE B.35b

OFNACER MONTHLY SALES FOR INDIVIDUAL SUBCENTERS

ORD: YATENGA
CDG: OUAHIGOUYA, 1983-84
(metric tons)

Subcenter	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	August	Sept.	Total	Percent of Total
Mag. Central (Ouahigouya)	167.0	178.1	187.7	301.0	97.8	180.7	140.8	204.5	437.2	97.7	775.2	280.1	3047.7	28
C.V. Marché Ouahigouya	22.9	6.8	24.2	76.8	198.0	214.6	110.6	315.2	338.4	171.2	359.6	359.9	2198.2	20
Titao	20.0	20.8	93.1	37.7	73.3	49.6	95.9	98.2	89.2	102.8	132.0	323.3	1135.8	10
Tiou	25.5	5.2	14.2	23.6	51.0	22.6	62.2	85.7	99.6	89.1	154.6	117.8	751.0	7
Ban	.5	1.7	.5	3.3	0.	0.	1.7	6.3	23.7	18.6	58.1	20.7	135.1	1
Séguénéga	43.0	55.7	19.3	4.7	60.9	49.8	62.5	81.4	125.8	65.2	184.6	79.9	832.7	8
Gourcy	18.6	2.5	0.	.2	19.7	44.5	63.2	32.6	63.1	115.4	196.0	138.0	693.7	6
Koumbri	19.7	1.9	2.4	0.	1.0	1.5	22.5	0.	37.1	43.1	75.6	85.8	290.7	3
Solé	3.2	0.	2.5	.4	0.	0.	1.0	0.	14.7	18.7	0.	6.8	47.3	0
Ouindigui	0.	0.	0.	0.	0.	0.	0.	13.2	0.	0.	0.	0.	13.2	0
Kossouka	0.	0.	0.	0.	0.	0.	0.	.5	0.	0.	0.	0.	.5	0
Ingané	3.2	1.3	1.3	1.6	0.	0.	1.3	2.0	0.	0.	0.	0.	10.7	0
Kalsaka	23.3	16.3	1.3	0.	0.	0.	0.	28.0	42.5	52.8	19.8	59.3	243.2	2
Zogore	0.	0.	0.	0.	0.	0.	0.	16.3	36.3	27.1	25.4	3.9	109.0	1
Namissiguima	0.	0.	0.	4.0	4.5	0.	27.7	17.5	38.1	5.6	50.1	.6	148.1	1
Tangaye	0.	.5	1.3	0.	0.	0.	0.	24.5	9.8	0.	18.3	53.0	107.4	1
Kaïn	0.	0.	0.	15.5	0.	0.	0.	6.5	0.	10.8	0.	14.9	47.8	0
Oula	0.	0.	0.	0.	0.	0.	24.4	0.	70.9	2.4	0.	0.	97.6	1
Tougou	0.	0.	.2	0.	0.	0.	0.	0.	13.0	14.1	0.	0.	27.3	0
Kalo	0.	0.	0.	0.	0.	0.	0.	0.	35.5	0.	0.	0.	35.5	0
Baraboulé	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0
Djibo	0.	119.3	19.5	0.	2.9	0.	0.	0.	0.	246.0	363.5	289.7	1041.0	9
Tongomayél	0.	18.8	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	18.8	0
Total	346.6	428.9	367.4	468.8	509.1	563.3	613.8	932.5	1474.9	1080.5	2412.7	1833.7	11032.1	100
Percent of Total	3	4	3	4	5	5	6	8	13	10	22	17	100	

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APPENDIX C

RAPID RECONNAISSANCE METHODOLOGY AND QUESTIONNAIRES

A RAPID RECONNAISSANCE METHODOLOGY FOR RESEARCHING AGRICULTURAL MARKETS IN LESS-DEVELOPED COUNTRIES

C.1 INTRODUCTION

Since the 1950s economists have devoted attention to studying markets and food marketing systems in developing countries. Efforts in this area were accelerated in the 1970s and early 1980s as it became obvious that increasing production alone would not alleviate hunger. This stimulated research on factors which affect food distribution, such as pricing policies, and transport and marketing infrastructure. Research on marketing systems resulted in recommendations for market improvement programs. Neither the research nor the concomitant recommendations, however, have had much impact on either market improvement programs or on the elaboration of government policies which affect markets.

There are several reasons for this lack of interaction between research and action. The first is political. Recommendations which do not fit with the stated political goals and ideals of a particular government are not likely to be incorporated into its policies. Similarly, if they are not acceptable to the market participants they will be difficult and costly to enforce, and are likely to fail.

Additional reasons for the lack of responsiveness of policy and action to research recommendations can be traced to factors over which researchers have control, for example, the involvement of the system's participants in the design of improvements, the timeliness of results, and the feasibility of implementing the conclusions and policy recommendations. These factors are related, at least in part, to the methodologies usually employed for researching marketing systems. This paper proposes an approach to marketing research which solves some of these problems -- Rapid Reconnaissance (RR).

Most research on Less-Developed Country (LDC) markets is part of a larger search to solve the problem of "How to feed people more efficiently". As part of this effort production researchers learned that technological improvements based on research station results, were often not adopted. Why?; Because the ability to adopt technological innovations depended on the existence of socioeconomic conditions. The

research station was not affected by these conditions. Therefore, they were not incorporated into the research, unless the researcher left the station to talk to users, farmers, to understand the non-technical constraints and to get ideas about how to overcome them, and how to implement the new strategies.

The analogous situation in marketing system research is the recommendations about how to increase competition which result from analysis based on theories of perfect competition. These recommendations rarely take the system's participants into account: the producers, consumers, traders of all types, and the government -- the people who will have to adopt the new "improvements" and for whom they should be designed.

Viewed in this way, solutions to the problem of feeding people more efficiently lie in research explicitly focused on the following four questions:[1]

1. How does the system stem function -- from the perspective of each type of participant.

2. What problems does each type of participant perceive?

3. What improvements (changes) would participants like to see?

4. What are the constraints to such improvements?

Data collected in response to these questions can be analyzed to describe and evaluate the existing marketing system, and to develop proposals for improvements.

Rapid reconnaissance is a methodology designed to systematically address these questions. The methodology has four essential characteristics:

1. It collects data on the system's participants' perceptions of how the system operates, and his/her relative place in it. Data from all types of participants is solicited.

2. It tries to cover an extensive geographical area relatively quickly, and thus comparatively cheaply.

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[1]A perfectly competitive system is a good reference. Improvements which improve competition will undoubtedly surface from different participants as desirable.

3. The data from each round of questions (pass) is digested before going on to the next one.
4. Successive passes are used to collect increasingly sensitive types of information.

The use of Rapid Reconnaissance techniques has been elaborated as part of the farming systems research approach. It was developed in response to the limited use of farm management research results in developing production improvement programs (see Collinson 1979). For marketing systems, as for production systems, RR is a diagnostic tool which can be used alone, but is best used in conjunction with other analytic tools such as price analysis and studies of farmer decision making vis-à-vis the market.

This paper proposes a Rapid Reconnaissance approach to marketing research which solves some of the aforementioned problems. It begins with a comparison of the results from different methodologies generally used to assess marketing systems. This shows that the RR approach yields results which are more useful for recommending specific improvement measures than the more traditional approaches. this is followed by a more detailed discussion of the RR technique, including an explanation of each of the steps. Linkages with other marketing assessment tools are discussed. This is the approach we used for the Rapid Reconnaissance portion of the research on grain marketing in Burkina Faso. Specific information on the regions, markets, and informants contacted, and the various stages of our RR research are presented in the Introduction to Volume II, Rapports Régionaux, the Rapid Reconnaissance reports.

C.2 BACKGROUND

Research on marketing systems generally focuses on the question "Are the markets competitive?" The methods used to answer the above question fall into one of two categories: (1) intensive questioning with extensive data collection; and (2) quick and dirty data collection. The results include two types of analysis: (1) descriptive analysis of market competition based on data collected from interviewing market participants; and (2) statistical analysis of market price series to evaluate the degree of market integration. Recommendations for improvements, therefore, focus on ways to make the system more

competitive. In this section we consider both the questions being asked, and the methodologies used to answer them, in order to identify areas upon which an alternative methodology must improve.

The importance awarded the question of the competitiveness of a marketing system rests in neo-classical economic theory, which concludes that a perfectly competitive system leads to the most efficient allocation of resources. The structure - conduct - performance (SCP) paradigm, is the elaboration of this theory applied specifically to industries and markets. It is the analytic framework most often used by neo-classical economists to analyze how a market or marketing system functions. SCP posits causal links between market structure and market conduct, and between market conduct and market performance.[2]

Both the long and intensive and the quick and dirty methodologies most frequently used to study markets respond to the data needs of analysis within this paradigm. Data are collected about the numbers and kinds of market participants and their relative influence on prices, concentration ratios, market associations, differences between the services of individual firms (credit, size of the measure) and mechanisms of vertical coordination. Price series, margins and costs are used to evaluate market performance.

In evaluating the structure, conduct, and performance of a marketing system the researcher usually focuses on assessing its relative competitiveness. This is done by identifying the ways in which the conditions in the existing system differ from those of the competitive ideal -- identifying market imperfections. Recommendations for improvements generally focus on ways to move the system toward a more perfect form of competition. This methodology is well suited to assessing competitiveness -- but, is that the most important question marketing research is trying to address?

The resulting recommendations are picked from a grab bag of general solutions to marketing problems: improve the flow of information (collect and broadcast prices), increase availability of credit, institute uniform standards and measures, improve roads, invest in marketing infrastructure, and recognize the importance of middlemen (rely

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[2]For a detailed discussion of this paradigm see Scherer, 1980.

on the private sector). Typically there is a lack of fine tuning of the recommendations to specific problems in different regions, and a lack of prioritizing of the suggestions. And not least of all, specific plans for how to implement the recommendations, and a discussion of potential problems of implementation, are usually included.[3] This may result from the fact that the researchers develop the recommendations from an uninvolved perspective. When system participants offer their own evaluation and recommendations, they can tailor them to the specifics of their situation.

Much of the strength of the traditional approaches lies in the confidence other researchers and policymakers place in numbers (which we like to call hard facts). Implicitly we assume that this view of the marketing system is less biased, and therefore, more true than the perception of individual market participants. It also assumes that the recommendations for improvements made by researchers are more valid than those of market participants.

These researchers, however, do not participate in the marketing system. Their ideas about what are the most important problems, or the best way to solve them may be completely different from those perceived by the participants. The results of these traditional research processes are then used in designing improvement programs. Therefore, the recommendations come from outside of the marketing system itself. This may be an important reason why such improvement programs don't work.

The Rapid Reconnaissance approach is based on the premise that the participants know the system, and are best placed to explain how it operates and offer suggestions for improving it. It seeks to describe the marketing system from the different participants' perspectives. Naturally, each group of participants has a different idea of what "better" means, and of how to achieve it. The researcher must integrate

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[3]One reason why research results are too general and recommendations difficult to implement, is that the research is viewed as a project unto itself, instead of as part of a larger project with feedback links to the development and implementation of policy. The problem the researcher is trying to solve should be how to improve or change the marketing system, not is the system competititive or how does it function.

these different views, and use them in helping to formulate recommendations. This approach does not change the economics of the problem, but rather the framework within which problems are defined and solutions sought.

In the ideal situation, the research would have a component in which market actors were consulted to help develop recommendations. The researcher would then play the role of facilitator, rather than as expert.

C.3 RAPID RECONNAISSANCE (RR)

The increased attention in recent years to RR techniques in gaining a preliminary understanding of issues and areas in the developing world, is related in large part to disaffection with both the intensive/rigorous approaches employed by academics, and the largely impressionistic quick assessments normally employed by donor agencies and national institutions in designing development projects. As discussed in the previous section with reference to marketing research, the intensive/rigorous methodologies often involve the collection of large quantities of information on a weekly or bi-weekly basis over an entire agricultural year and/or coordinating a base-line type survey with a large sample. These approaches are costly in terms of time and resources, and they are not immune to error. The quick assessment missions which have been labeled "windscreening" or rural development tourism by Robert Chambers (1979) often lack any explicit methodology and thus are especially sensitive to the preconceptions and skills of those collecting the information. RR might be characterized as an attempt to incorporate and systematize the best of the quick assessment approaches. Various RR techniques have been employed as components in Farming Systems Research (FSR).

The short time frame and limited resource requirements of RR are well suited to the initial diagnostic/descriptive and design phases of FSR where the objective is to generate hypotheses about potential improvements in production systems. RR provides a mechanism for overviewing farming systems in a given area and to focusing rapidly upon the most promising interventions or research approaches which appear to best address the constraints as perceived by farm families. The results

are a beginning of the search process in the case of FSR -- namely an overview of the farming systems to be assisted, together with specific proposals for research and development efforts in the area. The validity of these proposals is then the subject of further on-farm and statistical research in subsequent phases.

For marketing systems, RR can provide a similar mechanism for surveying the different participants across a large area to obtain a general picture of how the system operates, what the constraints are to improvements and in what areas interventions are needed. As with FSR, it can be used to select specific areas for more in-depth study. In addition it begins the important process of identifying key informants, i.e., traders, transporters, farmers, in areas not chosen for intensive study, who are willing and able to discuss more sensitive and complicated aspects of the business of marketing.[4]

Despite efforts at systematizing procedures, RR remains more of an art than a science. The specific sequence of activities described in more detail in the following section, are illustrative of the many RR approaches. Most include the following elements:

1. The initial step should be an overview of the area(s) or system(s) to be surveyed, including review of available documentation, discussion with authorities and other knowledgeable individuals and possibly short assessment visits to the areas.

2. On this basis, a preliminary determination can be made of: (a) the heterogeneity of the area/system and the associated boundaries (zoning/grouping); (b) the state of knowledge about each area/system; and (c) the resources required to carry out RR will depend to a large extent on (a) and (b). An area/system which appears quite homogenous and has already been intensively studied, will require much lighter treatment than highly differentiated areas/systems about which little is known.

3. Field visits are used to observe areas/systems directly and to interview farmers/participants. This may or may not involve designing and administering formal questionnaires, but most approaches use some form of questionnaire guide at a minimum. More emphasis is placed on locating respondents who are knowledgeable.

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[4]This problem is less significant when studying production systems. A relatively few "key informants" are interviewed in the process, rather than those who are necessarily typical or representative.

4. Field visits are normally made by small teams of investigators representing different disciplinary perspectives.

5. A preliminary report is prepared immediately following the field visits based on the results of the interviews and the conclusions of intra-team discussion held after each set of interviews.

6. Follow-up field visits may be used where the knowledge base is especially thin or the results of initial visits appear contradictory/inconclusive.

The more compelling advantages of RR include the low cost and limited time required relative to traditional, more rigorous research. Where questionnaires are used, "data" can also be generated which may be suitable for formal tabulation or analysis -- which is usually not the case with the typical quick assessment missions. Proponents assert that RR can generate 80% of the information about an area/system that might be gained from a formal "base-line" type survey. Where areas/systems are highly differentiated heterogenous, formal base-line survey methods applied to a large enough sample to be considered even marginally representative may prove prohibitively expensive.

RR also has a number of shortcomings. There is a tendency to rely heavily upon more articulate key informants who often represent the better educated, more powerful and well-to-do in the communities. Depending on the type of information sought, this approach can produce serious respondent biases. Also, respondents are often asked questions which elicit their general impressions about orders of magnitude in terms of land devoted to certain crops or labor requirements for various production activities, which often produce impressionistic responses. These impressions may or may not be close approximations of reality, which is why many researchers still advocate the use of direct observation and measurement. In the case of FSR, the former impressions are in fact the sought-after information. The farmers' perceptions of the nature and magnitude of the constraints they face are at least as important as the results of any "objective" assessment.

As with FSR, the proposed methodology for RR does not represent a total comprehensive substitute for more traditional marketing research. Rather it complements traditional approaches in a number of ways:

1. RR provides a means for more systematically selecting locations

for intensive studies using traditional approaches. This need not involve the full sequence of RR steps but perhaps the initial zoning or grouping operations which will be discussed in more detail below.

2. Use of RR methods concurrently with more traditional intensive methods provides a basis for determining the representativeness or applicability of the results from the more intensive studies.

3. As already noted in areas where the state of knowledge is particularly deficient and the area is highly heterogeneous, RR methods may offer the only practical solution to obtaining information given resource constraints.

4. RR methods depend heavily upon farmer perceptions of their conditions, in contrast to the direct or objective measurements of these conditions which is often the focus of intensive studies. A comparison of sets of information can be extremely valuable in understanding why farmers do what they do as well as the consequences of those decisions.

In general RR might be characterized as providing an additional set of research tools (although some researchers might be reluctant to dignify RR with such a label), which can significantly improve both efficiency and the quality of research in developing countries in rural areas, particularly if it is used selectively rather than as a substitute for all other forms of investigations. RR has the additional advantage of setting the stage for more participatory policy development.

C.4 DETAILS OF RR METHODOLOGY

What type of information can be collected using RR methods? In considering what type of information is suitable for RR methods, we must first consider the objectives of marketing research. Very simply, the objective is to gain an understanding of the marketing system: how it functions and why the various participants do what they do. Ultimately the aim is to determine whether or not a marketing improvement program is needed, and if so, where and what kind of interventions are most appropriate.

The type of information to be collected depends on the questions one wants to answer and the proposed methods for obtaining them. Answers to the following questions would give a fairly complete understanding of the marketing system:

- How does the marketing system operate now; how has this changed over time?
- Who are the different participants?
- How do they intervene/interact?
- What are the sources of supply, centers of demand, etc. (geographical aspects of the system)?
- How do different participants communicate and coordinate their activities?
- What are the constraints on participants' marketing behavior?

As mentioned earlier, with RR the information needed to answer these questions is obtained in an iterative fashion. At each stage the questions asked, which become more sensitive with subsequent passes, are informed and often formulated as a result of responses obtained during the previous pass. The key informants contacted at each iteration are honed from those contacted during the previous pass, to enable the development of the rapport and confidence needed to obtain valid responses to the more probing questions.

The specific topics to be addressed in each of the passes are listed below:

1. First Pass: (Researcher supervises interviewer's collection of data)

   Common Knowledge about the Marketing System:

   - Names of the types of market participants
   - Different marketing channels and their relative importance
   - Seasonality -- what are changes in volume related to
   - Geography -- where is the grain coming from, where is it going to and how has this changed in the past 10 years
   - Standard Operating Procedures (SOPs) -- how do transactions take place:
     - credit sales
     - commission sales
     - nature of the contract
     - what do people look for to judge quality
     - basic information on traditional units (sale units and dashes)
     - location
   - Transport arrangements and problems
   - Storage arrangements and problems
   - Market associations
   - Suggestions for improving the function of the marketing system
   - System of markets in your area: function (rural areas), time, and commodities
   - Ethnicity, area of origin for types of market participants (clan, caste)
   - Hierarchy of market places, types of market places (urban areas)
   - Major developments in the market in the last few years
   - Range of commodities handled by various types of intermediaries.

2. Second Pass: (Researcher-administered to key informants)

   The Why Questions:

   - What information goes into influencing prices (qualitative information to interpret price data)
   - Market associations -- delve into how they operate
   - Government policy -- what function does it play, OFNACER, what do they think it should do
   - For farmers -- when do you sell, and why; to whom and why (this is main focus of village cluster).

3. Third Pass: (Researcher-administered to key informants)
   Develop set of hypotheses about the functioning of the market (structure, conduct, performance).

   - Ask people what they think about it
   - Same for market improvements and government policy
   - Clarify and elaborate issues arising from first two passes

The specific steps in using the RR approach are summarized below, followed by a more detailed explanation of each:

1. Define and group the cells of the matrix of research units.
2. Select the priority areas on which the research will focus.
3. Group the cells according to characteristics which will affect the specific data collection methodology employed.
4. Determine in general and for each specific group what information to obtain.
5. Decide on the appropriate sequence of activities.
6. Design specific instruments to answer first pass questions.
7. Select a sample.
8. Analyze first pass results.

For each subsequent pass, steps 5-7 are repeated. The questions are asked to a subset of the previous key informants, who are selected based on a combination of their willingness to provide information, and of the relative importance to researcher attributes to the type of information they can provide.

1. Defining and Grouping

The purpose of this step is to define the areas or units on which the research will take place. The result should be a three dimensional matrix whose cells represent combinations of:

a. Relatively homogeneous geographic areas, defined for example as:

   - surplus
   - deficit
   - swing zones
   - urban areas
   - border areas

b. Categories of market participants, for example:

- producer
- bulker
- retailer
- consumer

The categories must be discovered in the field. The names given to the different types of intermediaries may be important data about how the system functions.

c. Commodities or categories of commodities. In general, these will be determined by the purpose of the research.

2. Selecting Priority Areas

This step narrows the research area from the entire matrix (above) to a smaller number of cells, on which to focus the actual field data collection, to achieve the research objectives within the time and budgetary constraints. The selection should be based on the following criteria:

- policy priorities;
- existing state of knowledge;
- how broad a coverage is needed to achieve the project's goals;
- the feasibility of working in different areas.

3. Grouping for Similarities in Research Techniques

This step takes the areas which result from step 2 and puts them in groups, each of which will require different research techniques (questionnaires, sample selection, sub-studies). Some possible grouping factors are:

- urban areas
- sparsely populated regions
- regional centers
- heavily deficit regions
- producers
- consumers
- traders of all sorts.

4. Determining What Information to Obtain

Obviously, the specific information to obtain depends on the main research questions and hypotheses. It is particularly important to focus on refuting, corroborating, or refining the conventionally held beliefs which drive policy decisions.

For each type of informant, we need to develop an exhaustive list of the questions we would like to have answered (type of information we want to gather). The list must then be broken down to separate the more sensitive questions, which should be saved for later passes, from the

questions which address less sensitive questions or commonly known information.

At this stage, it is important to remember to get the perspective of many different informants on the same questions. This is essential for developing a complete picture of the marketing system, and for developing useful recommendations.

These questions must then be developed into questionnaires which can be used easily by the interviewers.

5. The Appropriate Sequence of Activities

It is important to coordinate research visits in both time and space, so as to waste a minimum of time in travel. Our interviewer should be able to talk with three to four people in a day. This means that a team of two or three plus the researcher can cover an area in two to four weeks depending on its size, the frequency of markets and the ease of transport.

It is essential that there be discussions amongst the interviewers, everyday if possible, about the information being obtained. The researcher must debrief them once every week or so. During the First Pass, once the interviewers are well trained and understand how to work as a team, it is not necessary for the researcher to be continually present. First Pass material should be well digested, and hypotheses formulated before beginning Second Pass activities.

In major urban areas it may be necessary to revisit informants more often to nurture the trust relationship. By doing shorter First Pass interviews, the more obtrusive questions can be spread out over several meetings.

When two interviewing teams are employed to work in two areas simulaneously it is both important and fruitful to have unstructured, but researcher guided discussions with all interviewers present. A free flowing discussion of the information being obtained leads to a more informed view and a better understanding of the system. These discussions often unearth the underlying biases or conventional wisdoms of the interviewers themselves, which is important for interpreting their results and guiding further questioning.

6. Designing Specific Data Collection Instruments

As mentioned earlier, the instruments used to collect specific data will depend on the type of data being collected. These instruments

should be tested before use, by the interviewers on each other, and on some sample informants. Because we are not aiming for statistical significance, the instruments can and should be refined as the data collection proceeds.

7. Selecting a Sample

This is an area where RR differs significantly from more intensive research techniques. Randomness is unimportant and although representativeness is desirable, the principle underlying sample selection is the need to have spoken with members of all the major groups of market participants. Within each group, information about the relative importance (weighting) of each type of respondent can be obtained through the interviews.

Obviously, the size of the sample must be determined by time and money constraints as well as by the need for representativeness. Because the data in most cases are not numerical, statistical significance is not a constraint. It is important, however, not to commit the error of selecting too few informants to obtain a rounded view, or to choose respondents in such a way as to ignore areas of important variations (e.g., sex, ethnicity, wealth, social status, age).

8. Analysis

It is difficult to say how to do the analysis. At the end of the First Pass the data analysis should yield three specific results:

1. A list of missing information from the First Pass interviews;
2. A set of hypotheses about how the marketing system operates, including factors which account for differences in the relative importance of channels in different regions; explanations of trade routes and the direction of flows, and some basic insights into the major problems experienced by different participants;
3. A descriptive analysis of the marketing system, a synthesis of the reports done for each region.

C.5 OPERATIONAL LINKS WITH OTHER FORMS OF MARKETING RESEARCH

As mentioned earlier, RR can be used alone or in conjunction with other research methods. The techniques can be used:

1. To choose site locations for the more intensive components of a study.

2. To survey a large marketing network for either one or more commodities), to obtain data about the way the system functions, either as an end in and of itself, or to supplement and inform other techniques (such as price analysis).

The number of iterations will depend on time and budgetary constraints. The first iteration can be extremely informative, even if subsequent ones are not possible.

In a research program where several sub-studies will be done on separate, but related issues, the first iteration of the RR component should be done first -- to help get a lay of the land. The data gathered can then be used to select sites more efficiently for the sub-studies. Through the open ended interviewing process, problems and issues should surface which might otherwise not be discovered until after questionnaires were designed and sites were selected.

C.6 CONCLUSIONS

The reason for undertaking most studies of food marketing systems in developing countries is the feeling that the system does not deliver food to people as efficiently as it could. In this paper we have discussed a research methodology, Rapid Reconnaissance, which is designed to diagnose the problems of a marketing system as it currently exists. We developed this methodology because of the need for a diagnostic tool. As we have explained, the structure - conduct - performance paradigm (SCP) is an evaluative tool; the diagnosis which results from an SCP analysis is deduced rather than being explicitly part of the research. The purpose of the Rapid Reconnaissance approach we have outlined, is to recommend ways to improve the system. The need for an alternative to the traditional research approach results from the fact that very little policy and implementation have resulted from recommendations made using the SCP approach.

The RR approach is designed to solve three specific problems encountered when using traditional methods: (1) costliness; (2) the need to collect data over a long period of time; and (3) the fact that for recommendations to be implemented, they need to be rooted in the specific circumstances of the existing system, and need to take into account the participants' perceptions and opinions. Using RR one can collect lots of

qualitative information at a relatively low cost, comparatively quickly, and the problems with the system (the diagnosis) will come directly from the data. Finally, the recommendations can explicitly address the concerns of system participants, because data on their perceptions were explicitly collected. In fact, one can actually test one's hypotheses or recommendations with various system participants during one of the later passes. RR can also be continued after the intital study phase in order to keep tabs on the market.

Obviously RR is not a panacea, it has several specific problems which should be understood before designing a research program using it:

1. To be used effectively, RR requires intensive researcher supervision and involvement, which can cause researcher burn-out.

2. It requires very well trained interviewers who can work independently.

3. It is not meant to collect any time series data which can be analyzed, such as prices or costs.

4. The method needs refinement on: how to collect information on flows between regions; how to be used by national research bureaus; and how to be integrated with more quantitative techniques.

Ideally, one would want to use RR in the initial phases of a project to research a marketing system. The information gathered in the First Pass would be invaluable in selecting regions for more extensive study. The RR approach is a perfect complement to the traditional methods because it allows one to understand the issues which inform the quantitative analysis.

We developed this technique during our field research in Burkina Faso, because we needed a way to collect information about marketing throughout the country, quickly, and with a very limited budget -- information which would allow us to develop recommendations which would allow us to understand the perspectives of the various market participants. We used the RR technique to complement the other more traditional methods we were using.

APPENDIX C, continued

RAPID RECONNAISSANCE QUESTIONNAIRES

DOSSIER 1er PASSAGE RR A COMPLETER

Introduction: Résumé - synthèse du programme effectué dans la région - date/marché visité, travail effectué, personnes vues.

I. Depouillement d'après la liste des informations generales sur la région à demander. Informations sur la Région - Tableau le plus complet possible: Insister sur autres études effectuées dans la Région et existence de "Mercuriales" (dans quelles conditions ces prix sont-ils relevés?)

- CARTE SURPLUS - DEFICIT. (1)
- BANQUES DE CEREALES - Groupement villageois - Carte et commentaire - Liste des quantités stockées et différenciation des organismes financeurs - Illustrer la zone approvisionnée par chaque banque de céréales. (2)
- CARTE OFNACER: Carte des centres de ventes/achats de l'OFNACER et commentaires. (3)

II. Information-(Photo)-sur les Chaines de Commercialisation - Tableau 2. Représentation des mouvements ou flux de céréales entre les centres commerciaux villageois, locaux, régionaux, urbains de la région.

- CARTE STRUCTURE DES MARCHES. (4)

COMMERCANTS (d'après le depouillement des questionnaires)

III. Tables des Intermédiaires:

Joindre un schéma des chaines ou systèmes importants. Signaler les systèmes particuliers.

Tableau de la distribution par marché du nombre d'intermédiaires à chaque niveau.

IV. Commentaire du III:

Conditions de Transaction - Prix - Transport - Stockage - Accès au marché - Concurrence - Attraction du client - difficultés du commerce.

Inscrivez ici les informations recueillies auprès des informateurs dans l'ordre suivant:

A. Quels prix avez-vous collectés? Quelles informations? Commentaires sur les marges relevées et la différence de prix entre les marchés et les intermédiaires, y compris les prix officiels. (Faire un petit tableau.) Expliquez le processus de formation des prix et l'utilisation des mesures.

B. Quelles informations avez-vous eu sur les coûts de transport. Pour tout agent commercialisant des céréales (y compris organismes officiels ou autres organismes). Utiliser la carte (photocopie de la première) pour montrer le coût pour chaque trajet. Ne pas cublier d'y illustrer l'état des routes en saison sèche/en saison des pluies. Qui contrôlent les transports? CARTE ETAT DES ROUTES - TABLEAU COUTS DE TRANSPORT (5)

C. Les commerçants ont-ils des problèmes de stockage - stockage et différence selon les variétés, les années? Roulement des céréales d'années antérieures, pertes.

D. Accès aux marchés des commerçants - Concurrence ou entente? Comment attire-t-on et garde-t-on le client? Rôle du crédit.

- Importance, influence des éthnies dans le commerce et relations commerciales.

E. Difficultés du commerce - Changements depuis 10 ans - Choses à améliorer. Où trouver du capital. (Banques, commerçants, amis, organismes officiels?)

PRODUCTEURS (d'après depouillement des questionnaires)

V. Processus de décision de vente de céréales par les producteurs. Commentaire sur les principaux facteurs influencant la période de vente, le choix de l'acheteur, etc. Quels sont les autres produits commercialisés par les producteurs. Influence de ces produits sur le commerce des céréales. Si possible, carte des autres produits pouvant être commercialisés dans les différentes régions.

- Appréhension des mesures locales par rapport aux mesures officielles.
- Jugement sur différents agents de commercialisation - commerçant, OFNACER Banques de Céréales, etc.

VI. Commentaires généraux - Impression des Superviseurs RR - Particularités de cette région à suivre lors d'un second passage - Questions qu'il faudrait poser quand on aura gagné une meilleure confiance - Choses à éclaircir lors d'un 2é passage.

Annexes:

- Liste - de toute personne interviewée (entièrement ou non - avec ou sans fiche d'enquête) - Information sur ces informateurs en vue du 2è passage. Niveau de coopération et méfiance? Pourra-t-on voyager avec lui?
- Docments annexes des superviseurs - Fiches d'enquêteurs - Autres ...
- Documents collectés - confiés par informateurs - ORD - OFNACER, etc... (mercuriales, études diverses).

I. INFORMATIONS GENERALES SUR LA REGION

I. VISITES O.R.D. OFFICIELS ETC.

INFORMATIONS SOUHAITEES:

- Population -- (densité) (si possible) éthnies, principaux centres urbains. Mouvements de population. Géographie, cartes locales? (émigration, immigration) - (informations pouvant aussi être obtenues à Ouagadougou.)
- Production:
  - quels produits principaux (cultures de rente, cultures vivrières)
  - Niveaux rendements par rapport années antérieures, suivant les céréales - causes.
  - Quelles régions sont les plus productrices selon les céréales? Zones surplus - Zones déficit. Importance relative du déficit selon les zones.
- Commercialisation:
  - La région est-elle une entité économique au niveau de la commercialisation des céréales? Quel est le niveau d'intégration et de relations commerciales entre les principaux marchés de céréales de la région?
  - Mouvements céréales avec l'extérieur de la région.
  - Rôle des organismes suivants dans la commercialisation.

    * ORD
    * OFNACER
    * Groupements villageois
    * Banques de céréales

    Rôle proportionnel (quantité et politiques menées) joué par chacun d'eux actuellement et au cours des dix (10) dernières années.
  - Existe t-il des études effectuées ou en cours sur la commercialisation des céréales dans la région.
  - Une collecte des prix ou "Mercuriale" est-elle effectuée réguilièrement au niveau de l'ORD ou autre organisme dans les principaux marchés de la région.

    Depuis quand? Quels marchés? Type d'informations recueillies.

ENQUETEUR _____
DATE _____
LIEU D'ENQUETE _____
NOM ENQUETE _____

QUESTIONNAIRE POUR LES CULTIVATEURS VENDANT DES CEREALES

PRODUCTION - VENTES - DONNEES SUR TRANSACTIONS - MOTIVATIONS

1. Pouvez-vous indiquer pour chaque céréales quelles quantités vous avez produites, données, vendues, stockées l'année passée (récoolte 1982-83)?

Céréale	Production 82	Quantité Donnée	Quantité Vendue	Quantité Stockée
Sorgho Blanc				
Sorgho Rouge				
Petit Mil				
Mais				

2. Combien avez-vous vendu, donné, stocké de céréales depuis la dernière récolte (après la récolte 83)?

Céréale	Production 83	Quantité Donnée	Quantité Vendue	Quantité Stockée
Sorgho Blanc				
Sorgho Rouge				
Petit Mil				
Mais				

Combien pouvez-vous vendre encore avant la nouvelle récolte?

3. Pour l'année passée (82-83) (ou bien la dernière année où vous avez vendu des céréales au cas ou vous n'avez rien vendu l'année passée) à qui avez-vous vendu? (Rassembleur, petit commerçant, transporteur, etc.) Avez-vousvendu à plusieurs personnes? Quelles quantités avez-vous vendues avec chacune d'elles? A quelle époque avez-vous vendu et où?

	Type d'acheteur (caracteristique, origine, etc.)	Proportion Vendue	Epoque de Vente	Lieu de Transaction Quelle proximité?
Sorgho Blanc Sorgho Rouge Petit Mil Mais				

4. Pourquoi avez-vous vendu à certains acheteurs et pas à d'autres? Quels avantages? Quels inconvenients? Pourquoi sur certains marchés et pas sur d'autres?

5. Pour quelles raison avez-vous vendu (éventuellement donné) vos céréales à certaine période de l'année, plutôt quà d'autres? Raisons.

Après la Récolte (oct. - Déc. 82)

Jan. - Mars 83

Avril - Juin 83

Avant la Récolte (Juillet - Sept. 83)

6. Quand avez-vous vendu ou pensez-vous vendre pour cette années (après récolte 83). Pourquoi? Ou s'il n'y a pas de ventes cette année ni l'année

dernière, alors lors d'une année normale, quand effectuez-vous vos ventes et pourquoi?

7. Quelles unites du mesure utilisez-vous pour vos ventes? Y-a-t-il eu des changements dans la mesure utilisée depuis les 10 dernières années?

Céréales	Unité de mesure	Changement de mesure et raisons

N'oublier pas de poser des questions supplémentaires dur la connaisssance de l'équivalence en kg. de leurs mesures traditionelles. Pourquoi veulent-ils garder ces mesures?

STOCKAGE - TRANSPORT - COUTS

8. Avez-vous conservé en stockage des céréales de l'année dernière et des récoltes antérieures? En quelles quantités? Que se passe-t-il lors d'une année normale? Pourquoi? Stockage?

9. Les céréales vendues pendant l'année dernière (récolte 82 à récolte 83) provennaient-elles de la récolte 82 ou bien de la récolte antérieure? De quelles années sont-elles? Expliquez la raison du choix de céréales vendues.

10. Est-ce que la plupart de producteurs font le même choix? Cela dépend de quels facteurs durant une année de production normale?

11. Quels sont vos moyens de stockage pour chaque céréale? Quel est le temps de stockage moyen pour chaque céréale? Avantages - inconvenients - problèmes et coûts rencontrés pour ce stockage.

Céréales	Moyen de Stockage	Durée Moyen de stockage	Problème rencontrés Quels sont les coûts

12. Quels moyens de transport utilisez-vous pour apporter vos céréales au marché ou sur les lieux de transaction? Le faites-vous même, avec vos propres moyens de transport, ou qui les transporte? Quel est le coût de ces transports?

Céréales	Qui assure le transport Par quels moyens	Coûts Transports

L'accès à ces moyens de transport est-il facile? Quel est le niveau de l'offre de transport au niveau local? Les propriétaires de ces vehicules peuvent-ils exercer sur les utilisateurs des pressions? Concurrence entre les transporteurs.

CONDITIONS DE COMMERCIALISATION

13. Avez-vous déjà vendu "en herbe", ou reçu des avances sur la vente? Est-ce une pratique courante dans la région et dans les dix dernières années? Cela se faisait-il? Expliquer ces arrangements et les raisons d'une telle pratique.

14. Y-a-t-il un groupement villageois dans votre village/zone/ou région? En êtes vous membre? Ont-ils une banque de céréales? Vous en servez-vous? Si non, pourquoi pas. Si oui, expliquer. Vendez-vous ou achetez à l'OFNACER? Pourquoi?

15. Est-ce que votre village (ou région) est auto suffisant en céréales? Si non, quelles sont les cultures principales achetées à des périodes partculières de l'année? Dans quels marchés? Que faites-vous vous même?

Saison	Céréales achetées (Niveau de quantité)	Marchés lieu d'achat
Hivernage (Juil.-sept.) Récolte (Oct.-Déc.) Saison sèche (Jan.-Juin)		

16. Quels sont les facteurs principaux qui influencent vos achats ou ventes des céréales, outre les besoins de consommation - importance du prix d'achat, nombre d'acheteurs ou vendeurs, problèmes de transport, de stockage, etc... Rôle des activités annexes.

QUESTIONNAIRE POUR LE 1er PASSAGE DE L'ETUDE DES MARCHES RR

1. Enquêteur _____
2. Date _____
3. Lieu d'enquête _____
4. Type d'intermédiaire dans la commercialisation. _____

QUESTIONS GENERALES - MARCHES DES CEREALES DANS LA REGION

5a. Quels sont les principaux marchés dans la région en ce qui concerne la commercialisation des céréales et quels sont les marchés secondaires? Indiquer les par ordre d'importance. Quelle distance entre eux et sont-ils pratiquables en toute saison?

_____

_____

_____

5b. Comment et à quoi se délimite la zone d'influence de chaque marché cité plus haut? La zone d'influence est la zone àl'intérieur de laquelle un marché principal a des relations avec les marchés secondaires et les villages avoisinnants.

Marché Principal Zone d'influence (Marchés secondaires)

_____

_____

_____

5c. Entre les principaux marchés cités dans la région dans son ensemble, y-a-t-il des relations importantes entre ces marchés à l'intérieur de la région ou bien les commerçants opérant sur un marché et sa zone d'influence n'opèrent pas sur les autres marchés principaux? Sont-ils des marchés indépendants?

_____

_____

_____

6. Quelles sont les céréales qui font l'objet de plus de commerce dans les marchés principaux et leur zone d'influence?

Citer ces céréales par ordre d'importance. Peut-on donner un ordre d'idée. Sur ces 10 sacs de céréales commercialisés, combien de sorgho blanc, etc.?

Répéter cet exercice pour chaque marché principal.

Ordre des céréales:	Sur 10 sacs combien pour chaque type de Céréales?

7. Pour chaque céréale, peut-on citer et classer les marchés principaux et les marchés secondaires par ordre d'importance? Cet ordre d'importance change-t-il pour les différentes saisons? Si oui, indiquer le nouveau classement des marchés pour chaque céréale à chaque saison.

Céréales Marchés	SAISON			
	Automne/Récolte	Jan./Mars	Avril/Juin	Juillet/Sept.

8. Pour chaque céréale, quelle est la part des céréales commercialisées dans le total des céréales produites dans la région ou dans la zone de ce marché?

Quelle est la part de ces céréales commercialisées qui est acheminée à l'extérieur de la région ou de la zone de marché? Pouvez-vous donner une approximation? Vers quelle direction ces céréales vont-elles?

Céréale	Sur 100 sacs produits combien commercialisés année normale?	Sur 10 sacs commercialisés quelle consommation locale?	Principale destination des céréales partant de la zone du marché ou de la région. Importance relative de chaque direction prise.

INFORMATIONS SUR LES CHAINES DE COMMERCIALISATION DES CEREALES, TYPE D'INTERMEDIAIRES, TRANSACTION, ETC.

9. Quels sont les principaux niveaux d'intermédiaires qui se chargent de la commercialisation des céréales dans la région ou dans la zone d'influence du marché?

En prenant les systèmes de commercialisation les plus courants dans cette région, décrire les différents niveaux d'intermédiaires et leur fonction dans cette chaine de commerce. Peut-on donner une idée du nombre d'intermédiaires existant à chaque étape de la commercialisation dans la région ou sur le marché principal?

Système de commercialisation courant Chaine d'intermédiaires Noms locaux	Fonction	Nombre approximatif sur le marché ou région

Ce système de commercialisation a t-il changé au cours des 10 dernières années? N'y-a-t-il pas de changement de ce système selon la saison, la localité, le niveau de production? Décrire les chaines commerciales particulières.

10. Rôle de l'informateur dans le système de commercialisation local, activité principales, point de base, type de céréales commercialisées.

11. Si l'on prend chaque niveau d'intermédiaire un à un (producteur, agent, rassembleur, commerçant, etc.), quels sont leurs points de base, leur activités annexes?

- Pratiquent-ils le commerce à plein temps ou comme activité minoritaire? Viennent-ils de l'exterieur, proviennent-ils ou font-ils partie d'une ethnie, d'une origine ou d'un groupe spécifique? Quels sont les groupes ethniques les

plus importants à chaque niveau d'intermédiaire? Prendre chaque type d'intermédiaire de la chaine un à un.

Type d'intermédiaire	Point de base. Activités annexes. Temps consacré au commerce	Ethnie

12. A chaque niveau, quelle est la zone ou le rayon d'activité de chaque intermédiaire, quels sont les liens commerciaux entre eux et les autres intermédiaires. Point de transaction. Cela diffère-t-il selon les céréales?

Intermédiaire	Rayon d'activité Point de transaction Niveau des liens avec autres intermédiaires

13. Pour chaque niveau d'intermédiaire donner un ordre de grandeur du niveau de céréales commercialisées dans une année normale, le type de mesure utilisée (à l'achat et à la vente) (louche, aissette, tine, etc.).

Quels sont les termes de transaction habituels; et y-a-t-il des ristournes, à quel niveau les céréales sont-elles payées cash ou à credit?

Si ces termes de transaction sont différents pour les diverses céréales, noter les par céréale. Noter aussi si les critères spéciaux de qualité par céréale modifient les conditions de transaction dans une année normale (intermédiaire).

Céréale	Type d'intermédiaire	Niveau de quantité commercialisée dans l'année	Type de mesure	Caractéristiques de la transaction, cash crédit, ristourne?

Les mesures utilisées peuvent-elles être comparées et jugées en fonction des mesures oficielles? Connaissent-ils l'équivalence en kg. de leurs mesures?

14. Transport: Décrire les systèmes de transport pour chaque composante des chaines de commercialisation qui implique un déplacement de céréales. Est-ce que les intermédiaires possèdent habituellement leur propre moyen de transport? Moyens et coûts de transport.

Intermédiaire	Moyens de transport/Propre ou loué?	Coûts	Problèmes

15. Stockage: Pour chaque céréale et pour chaque intermédiaire, indiquer quelles sont les périodes habituelles d'achat et de vente; quelle est la durée du stockage effectuée par chaque intermédiaire, par quels moyens de stockage et demander quels sont les problèmes posés par ce stockage.

Céréale	Intermédiaires	Période, époque d'achat et de vente	Durée habituelle du stockage	Quels moyens de stockage et problèmes posés

16. Connaissance des conditions du marché:

Les différents intermédiaires, (producteurs, petits commerçants, etc.) sont-ils au courant des conditions sur les marchés? Quels prix, quantités de céréales offertes, prix de transport, possibilité de ristourne, crédit, etc.?

Si oui, comment obtiennent-ils ces informations et jusqu'à quelle "distance" (des marchés) peuvent-ils connaitre ces informations.

17. Association des commerçants:

Y-a-t-il des associations actives ou inactives de divers types d'intermédiaires ou producteurs dans cette région? Donner des noms d'associations, noms des "responsables" eventuellement, leur fonction, nombre et nature des membres. Quelles sont les conditions d'adhésion? Inclure les associations qui ne sont plus actives et les raisons pour laquelles elles ne le sont plus. Décrire ci-dessous.

DIFFICULTES ET PROBLEMES DU COMMERCE

18. Comment débute-t-on comme commerçant? Quelles sont les difficultés majeures?

19. Quels sont les problèmes majeurs que rencontrent les commerçants et les systèmes de commercialisation céréalière dans cette région? Concurrence et attraction du client.

20. Quel genre d'améliorations faut-il dans le système de commercialisation des céréales?

21. Y-a-t-il eu de changements pendant les dix dernières années?

22. Y-a-t-il de commerçants en faillite? Si oui ou non, pourquoi?

23. Que faut-il à un commerçant pour réussir? Quels sont les commerçants opérant dans cette région qui ont réussi?

24. Avez-vous des questions à nous poser pour notre retour eventuellement recommendation ou conseils?

FICHE: 2° PASSAGE RR-

RELEVE DES INFORMATIONS SUR LES CHAINES DE COMMERCIALISATION
DE CEREALES SUIVES PAR LES ENQUETEURS (Poids - prix dans les transactions observées)

Date observation	Point de Production			Marché Régional		Marché National		Vente Finale
Nom observateur	Village (Producteur)	Poids Prix	Marché Intermédiaire	Poids Prix	Intermédiaire	Date Observation	Intermédiaire Poids - Prix	Intermédiaire, consommateur

SUIVI CHAINES: FICHE INTERMEDIAIRE: 2° passage RR - pour chaque personne interrogée dans le cadre d'une chaine de commercialisation de céréales selectionnée.

DATE:

- Remplir pour chaque intermédiaire intervenant dans les chaines que vous avons choisi de suivre.

- Indiquer sur cette fiche le numero de la chaine ou cette personne intervient.

No. CHAINE FONCTION DE CETTE PERSONNE AU SEIN DE LA CHAINE

RENSEIGNEMENTS SUR LA PERSONNE (dans la mesure du possible)

- NOM o AGE APPROXIMATIF o ETHNIE
- ORIGINE (très important) o BASE ACTUELLE
- HISTORIQUE DE CES ACTIVITES DE COMMERCIALISATION. Comment est-il venu au commerce?

RENSEIGNEMENTS SUR SES ACTIVITES COMMERCIALES:

SAISONS	NOV-DEC-JANV	FEV-MARS-AVRIL	MAI-JUIN-JUIL	AOUT-SEPT-OCT	TOTAL/AN
Petit Mil					
Sorgho Blanc					
Sorgho Rouge & Mais					
Autres Produits					

Indiquer à chaque fois pour l'achat et pour la vente la mesure et le prix pratique pour cette mesure.

II. PHOTO DE CHAINE DE COMMERCIALISATION - PRINCIPAUX MOUVEMENTS		NOM DE LA REGION
MARCHES SECONDAIRES CORRESPONDANTS Moyens de transport	PRINCIPAUX MARCHES Moyens de transport	PRINCIPALES DESTINATIONS CEREALES
NOMS DES MARCHES - DISTANCE - ACCESSIBILITE PAR ORDRE D'IMPORTANCE Importance de chaque culture sur chaque marché 1) 2) 3) 4)	NOM DU MARCHE - importance des céréales différentes - Liens avec autres "principaux Marchés" 1) 2) 3)	PAR CULTURE PRINCIPALE A) Sorgho Blanc (importance des destinations) - consommation locale - principale destination B) Sorgho Rouge C) Petit Mil D) Mais

- Quels sont les produits qui vous rapportent le plus? Variations des profits?

- Quelles sont les mesures qui rapportent le plus? Achat et vente.

- Quelle sont les saisons qui rapportent le plus?

- Quelles strategies de stockage rapportent le plus?

- Quels sont les lieux d'achat qui rapportent le plus? Les plus accessibles? Les moins accessibles? Quels fournisseurs font-ils faire les meilleures affaires? Les écarts de benefice entre les lieux et personnes sont-ils grands? Quels écarts de quantité vendue par chaque fournisseur? (Quantité moyenne?)

- Quels sont les lieux de vente, les clients qui rapportent le plus? Y-a-t-il beaucoup d'écart entre eux - vos clients connaissent-ils vos conditions d'achat?

- En quoi le choix des mesures, du stockage, des lieux d'achat et fournisseurs des lieux de vente et clients changent-ils en cas de
  - très bonne recolte?
  - très mauvaise recolte?

III. TABLE DES INTERMEDIAIRES NO[illegible] MARCHE OU DE LA REGION

NIVEAU D'[illegible]E PAR ORDRE CROISSANT PRODUCTEUR CONSOMMATEUR	ROLE FONCTION (nombre approximatif sur le marché)	ACTIVITES POINTS DE	ANNEXES BASE	ORIGINE ETHNIE	ZONE D'ACTIVITE LIENS AVEC AUTRES INTERMEDIAIRES CEREALES	NIVEAU DE QUANTITES CEREALES COMMERCIALISEES/	MESURE UTILISEE	TERME DE TRANSACTION/ CEREALES	TYPE DE TRANSPORT/ COUTS	EPOQUE ACHAT/ VENTE TYPE ET LONGUEUR DU STOCKAGE	CONNAISSANCE DES PRIX ET CONDITIONS DES AUTRES MARCHES	NIVEAU DES PRIX				ASSOCIATIONS ENTENTE GROUPES COMMERCE	PROBLEMES AMELIORATIONS SOUHAITEES QUALITES DU COMMERCANT
												ACHAT		VENTE			
												SAC	ASSIETTE	SAC	ASSIETTE		
NIVEAU 1 Personnes interrogées (NOMS) (LIEU D'ENQUETE)																	

CONDITIONS DE SUCCES DANS VOS ACTIVITES COMMERCIALES
RELATIONS AVEC INTERMEDIAIRES

- Comment vous informez-vous des prix et quantités disponsibles? Sur les lieux d'achat? Sur les lieux de vente?

Les prix varient-ils beaucoup d'un marché à l'autre? Entre différents producteurs les prix pratiqués dans un endroit influencent-ils les prix dans un autre endroit proche? Pourquoi?

- Y-a-t-il une concurrence autour de vous? Où, quand? Comment? Pour acheter? Pour vendre? Ou bien y-a-t-il un accord, meme tacite, entre les gens remplissant la même fonction commerciale?

Offrez-vous les memes services, les mêmes conditions d'achat et vente dans la région?

Les écarts d'un agent à l'autre (ou commerçant) sont-ils importants? Dans quelles conditions? Y-a-t-il une concentration des achats ou des ventes locales de céréales par l'un d'entre vous? Concurrence de l'OFNACER, des Banques de Céréales?

- Quelles sont vos relations avec les fournisseurs à qui vous achetez? Sont-ils des fournisseurs regulièrs? Ou occasionnels? Comment conserver les fournisseurs? Comment en attirer d'autres? Pensez-vous que ces fournisseurs soient informés des prix, des mesures, des quantités, que l'on trouve ailleurs?

- Quels sont vos liens et conditions avec vos clients? Sont-ils des acheteurs reguliers? Occasionnels? Comment les conserver? En attirer d'autres?

COUTS DE COMMERCIALISATION

TRANSPORTS - DEPLACEMENTS

coût par sac	Location de vehicule	Propriété d'un Vehicule
	coût de location_____	coût véhicule_____
	essence_____	& de vie_____
	chauffeur_____	essence_____
	tonnage du véhicule_____	entretien_____
	autre gains avec_____	chauffeur_____
	ce véhicule_____	

MAIN D'OEUVRE - AIDE

Employés____ Nombre____ Paiement_____ "Petit frères" aides:___

intermédiaires locaux (commission, cadeaux...)
(s'assurer que la commission n'a pas été incleé dans le prix du sac à l'achat, si indiqué)

EMBALLAGE - STOCKAGE - COMMERCE

Payez-vous les sacs vides? Combien?
Quel coût pour le stockage par sac votre propre magasin
location par mois ou année
Coûts pour les pertes combien de sacs?
Coûts pour la patente prix de la place au Marché

CAPITAL

Intérêts sur emprunts? (pour le commerce des Céréales)

Pertes pour non Remboursement des crédit octroyés aux fournisseurs ou clients:
sacs/an évaluation de la somme

DIFFICULTES (Noter les difficultés d'accés au transport, à l'information, à certains marchés, à la main d'oeuvre, les difficultés d'approvisionnement, d'écoulement.)

FORMATION DES PRIX

Si possible, discuter avec l'informateur sur le processes de formation des prise et l'etablissement des marges.

APPENDIX D

VILLAGE STUDIES
METHODOLOGY AND QUESTIONNAIRES

APPENDIX D

VILLAGE STUDIES METHODOLOGY

D.1 INTRODUCTION

The collaborative effort on the Burkina Faso Grain Marketing Project consisted of a trilateral research design of Market Studies, Urban Studies, and Village Studies. These three integrated parts of the overall project were designed and implemented by an interdisciplinary team of researchers. Given this interdisciplinary approach of the research effort, multiple research methodologies were employed to garner the necessary qualitative and quantitative data to identify smallholder farmer marketing strategies.

The major goal of the Village Studies component of the Burkina Faso Grain Marketing Project was to acquire a better understanding of the farm household economy with special attention paid to marketing activities, both buying and selling, of cereal grains. Pursuit of this goal involved a greater appreciation of farm level decision making with regard to marketing cereals and also the market conditions that the farmers faced.

Thus the basic objectives of the village studies were to determine:

- HOW farmers decide to dispose of or acquire their cereal foodgrains
- WHY farmers decide to dispose or acquire in that fashion
- WHAT are the market conditions confronting farmers

Through the village studies dataset the research team aspired to identify farmer strategies to sell, store, buy, consume, or otherwise dispose of or acquire cereal grains within the context of the entire farm household economy. Of primary importance is the determination of the variables that influence grain transactions at the producer level and once identified, the nature of those determinants. The third objective also concerns how farmer behavior, for both surplus and deficit producers affects the market.

This chapter outlines the research methodology employed by the Village Studies team to meet its multiple objectives. The mainstay of the research effort was the economic survey data based on a questionnaire

format. The data collection technique focused on economic transactions but was sensitized, with the help of the project anthropologist, to social transactions of obligations, reciprocity, and redistribution. More traditional economic information was gathered via price data on cereals in the village markets.

The bulk of the data collected is represented by the survey data and market price information. However, recognizing that a wealth of quantitative data without the qualitative insights with which to decipher them would not be insightful, more qualitative techniques were added to the overall research effort. These include intensive farmer and grain trader interviews, plus a sales preference study of farm assets using photographs. The combination of both qualitative and quantitative techniques allows greater sensitization of the analysis of the overall dataset with a heightened appreciation towards village realities. These efforts were supplemented by the standard methodologies employed for site and sample selection. The final section of this chapter offers suggestions for improving the research to future researchers.

D.2 SITE SELECTIONS

D.2.1 Regions

The mandate of the Grain Marketing Project required the examination of both cereal grain disposition and acquisition strategies of smallholder farmers. Working with the resource constraints of the project two regions of study were chosen, one in a surplus area (for following mostly disposition strategies) and the other in a deficit area (for following mostly acquisition strategies). These two regions were populated by different ethnic groups and existed in different agroclimatic zones with different major and minor crops. The existence of a major private grain trade between the two regions was also suspected because migrants were known to be moving from the chronically deficit north to the more fertile, less populated and better watered southwest of Burkina Faso. The surplus region of study was the former province of Volta Noire (presently Mou Houn, Sourou and Kossi Provinces) and the deficit region was the province of Yatenga.

An overall attempt was made to work in previously unstudied areas and villages in order to complement ongoing research by other researchers in different regions of the country. Due to this desire not to overlap with already completed, existing or planned studies a good deal of research effort was focused on collection of baseline descriptive data of the regions and the economies contained or interacting with them. Basic descriptive research was also necessary due to the limited amount of literature on grain marketing by smallholder farmers.

The actual process of selecting the regions for study was prefaced by research team visits to the areas, discussions with local officials (from the ORD, OFNACER, Mairie, etc.), and discussions with other research teams in Burkina Faso (ICRISAT, SAFGRAD, etc.). During this stage of the selection procedure no villages were selected, rather regions of study of most interest to grain marketing were targeted for extensive fact-finding visits by the research team. Once the regions of study were decided upon, more intensive visits were made in each region in preparation for village selection.

D.2.2. Villages

In selecting the villages to be studied within each region a variety of criteria were employed. Foremost was the need to have two villages within each region which would reflect different aspects of the regions themselves. The research team was particularly interested in having villages with different access to local markets. Including more than one village in a region was also seen as a way to provide an area of wider applicability for any results emanating from the study. It also provided insights into any intra-agroclimatic zone variation, thus site dispersion within the agroclimatic zone was desired. The limit of two villages per region was also felt to be the maximum use of project resources. In the same regard no village was chosen that was over a one hour drive (one-way) from the respective regional capital. This was seen as expedient for minimizing researcher road-time as well as for logistical and safety reasons.

Of major concern was that the villages chosen not be located on main roads, especially paved roads, because any marketing information collected in a well-connected village would be extremely biased and not

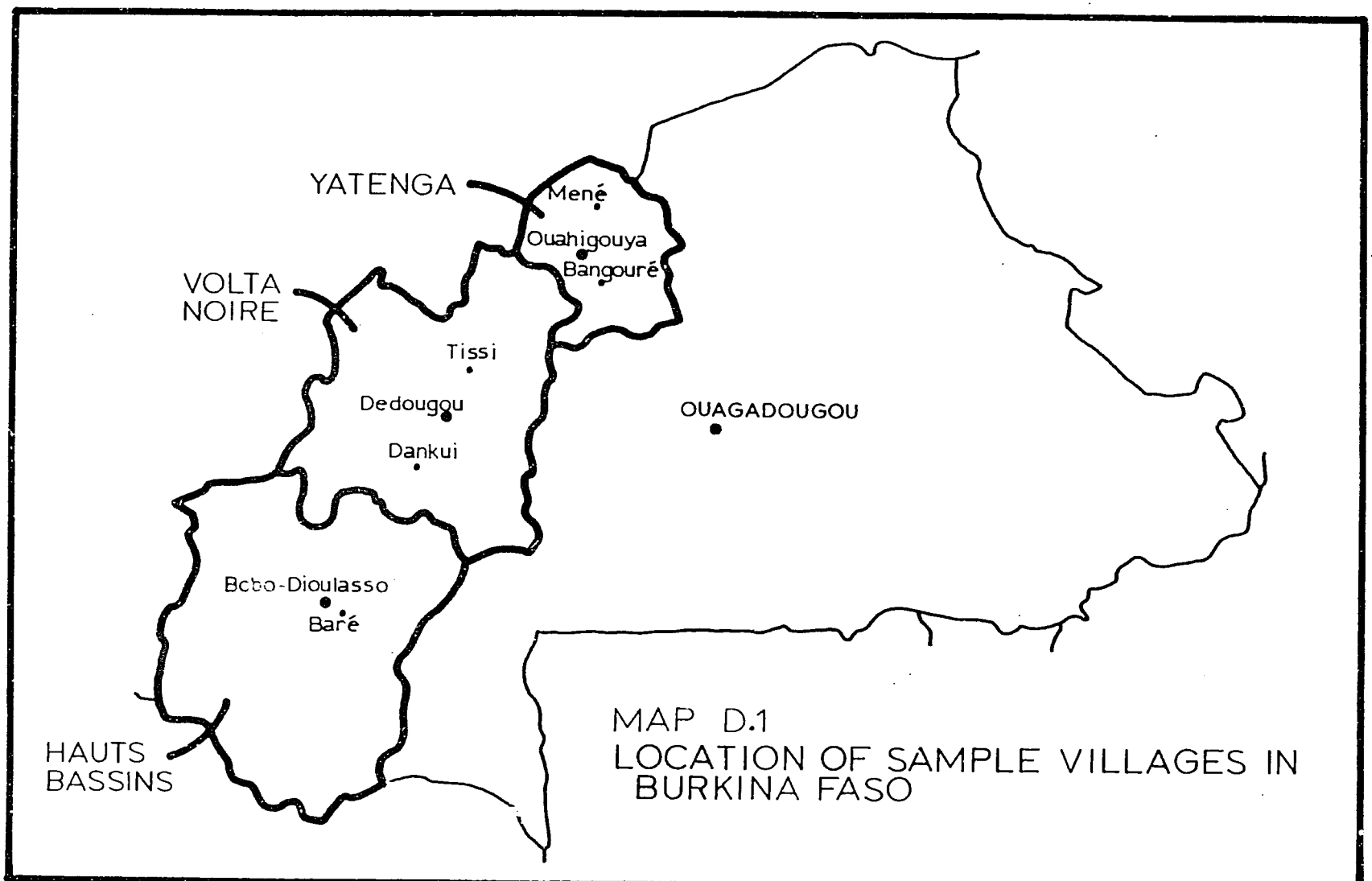
widely applicable. The majority of villages in Burkina Faso are not located on paved roads. Not all major markets are located on good roads and villages were chosen across a spectrum of market sizes from important regional market villages to villages with no formal market at all.

In order to acquire this level of information on a village the researchers relied again on the local institutions to provide information and, at times, to provide guides. A principal resource in this regard was the ORD in each regional capital. Villages were chosen for site visits by the research team and additional 'field' information on each village was gathered from the rural ORD and government representatives in each sub-region.

Upon arrival in the village of choice an accompanying ORD or government representative introduced the research team to the chief of the village. The project was explained to the chief and often the assembled elders. Subjective impressions of the receptiveness of the chief and the elders to the study also entered into the final decision to work in any one village. Once the decision was made to work in any one village the relevant local authorities were informed of the exact locations in which we planned to work.

In the deficit Yatenga region the villages of choice were Mené and Bougouré. Mené has a major regional market, is 45 kilometers northeast of the regional capital, is mostly Mossi in ethnic mix and its main crop is pearl millet. Bougouré has a small market, is 35 kilometers southeast of the regional capital, is completely Mossi and its main crop is white sorghum. Map D.1 shows the location of all the village sites.

The search for village sites in the surplus region of the former Volta Noire yielded the two villages of Tissi and Dankui. Tissi has no market itself, is located 60 kilometers north of the regional capital, is mostly Dafing in ethnic mix and its main crops are the sorghums, both red and white. Dankui has a local bush market, but not in the geographic confines of the village itself, is located 54 kilometers south of the regional capital, is a mixture of the Bwaba, Mossi and Fulani ethnic groups and its main cereal crop is sorghum but cotton is an important cash crop.



MAP D.1
LOCATION OF SAMPLE VILLAGES IN BURKINA FASO

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

D.2.3 Markets

In preparing to study grain marketing in Burkina Faso the research team acknowledged the fact that farm households make their marketing decisions within the economic environment in which they find themselves. One cannot examine farm household marketing decision-making without also understanding the market conditions that confront farmers. To reflect this concern a small-scale, yet intensive, rather than extensive version of the market studies was instituted around each of the chosen village sites. These research efforts included price collection, interviews with grain traders, and thematic interviews with farmers.

For each of the four villages one to two markets were chosen based on the most frequently visited markets cited by farmers and appearing on the questionnaires. After one month in each village it was readily apparent, through general observation and interviews, which markets were frequented by the farmers in our sample. This subjective information was checked against the more objective data resulting from the sale and purchase location questions on the questionnaires.

In addition to these village level markets prices were collected and interviews conducted at the regional capital level. This was deemed important because the regional capitals were often the location of major markets, OFNACER warehouses and other grain market participants (ORD, PVO's, etc.). These regional capital markets, located in Ouahigouya (Yatenga) and Dédougou (former Volta Noire), ranged from a minimal grain market (Dédougou) to a major player in both regional and national cereal marketing (Ouahigouya).

In the deficit region of Yatenga the village of Mené is one of the largest cereal markets in the area. As such, it dominated the sample farmers' choice of which market to visit. It was the only market around the Mené site where price data was collected. Interviews were conducted in other surrounding markets that were mentioned by farmers. Around the second deficit region village of Bougouré two markets were selected for study, one at Ziga (7 kilometers west), and one at Douré (14 kilometers east). Price collection was begun at both sites but discontinued at the Douré site due to trader intransigence. Ziga is a larger village than

Bougouré and is the location of the sub-regional cereal bank. It is frequented mostly by small local traders.

In the surplus regions of the former Volta Noire one market was chosen around the village site of Tissi. Tissi itself, it will be recalled, has no market and as such villagers are obliged to travel elsewhere to meet their marketing needs. Gassan is 9 kilometers northeast and is located at a major intersection which offers a choice location for market activity. For Dankui, the other surplus village in the former Volta Noire two markets of study were chosen. Tchiookui, the 'suburb' market of Dankui, is a bush market and is located 12 kilometers northwest from the village center. Koumana, the second market chosen in the Dankui area, is a large market located far into the countryside some 35 kilometers southwest from Dankui that was frequented by local farmers.

D.3 SAMPLE SELECTION

D.3.1 Farmers

Within each of the four original village sites a stratified random sample was chosen based on a village census performed by the research team. The stratifying factor employed in the sample selection process was ethnicity. It was matched to the population percentages of the various ethnic groups in each village. The sample element was the compound and thus, when a compound was chosen all the households within that compound were retained in the sample. This process was continued until a total of approximately 45 households were selected in each village.

In order to implement the sample selection process a general village meeting was called through the auspices of the village chief. The research team used this meeting to explain the nature of the study and to introduce the field personnel to the assembled villagers. The village census was then taken over the course of 2 to 3 days. The data were assembled by compound, with each compound comprised of its constituent households. The random sample was chosen and the subsequent sample members were notified via the village elders. Any household that was chosen which did not wish to participate was allowed to withdraw. There were no more than two such households in any one village.

A comment is in order at this juncture on the nature of the Burkinabé farming household. It should be thought of as a dynamic and not static entity with its size, composition and even independent status changing over time and circumstances. In the study, shortly after the original sample households were selected, each household was judged separately as being either an independent decision-making unit or dependent on another household, usually within the same compound. Additional compounds and their respective households were then selected to bring the sample size in each village to approximately 45 decision-making units. The basis for distinction of independent from dependent households were independent storage and fields, consumption patterns, physical proximity and labor allocation. No set combination of these criteria were used in judging independent status and each household was judged separately.

Additional households of notable individuals were added to the sample in the two Yatenga villages. This was deemed advantageous in order to assure villager participation and good will. It also provided an additional point of analysis with regard to the overall economic influence such social notables hold within each village. Those notables included were: the chief, the earth priest, the president of the village cooperative societies, the Imam, and the chief of the smiths.

D.3.2 Traders

The cereal traders at both the village and regional capital levels were chosen in a more subjective manner. Initial contacts were made in the village usually by introductions from a third party. Due to the previous changes in government cereal grain policy the traders were more wary than the farmers in talking with our field research team. But once the confidence of one trader was gained the team would ask him or her to introduce them to another trader. The Mené village sample also contained one village level cereal trader who proved to be advantageous in making further contacts. At other times and in non-sample villages the team would look at who was trading in cereals and introduce themselves. At the regional capital level it was necessary to make appointments with traders not only due to their tight and busy schedules, but also to be able to have some privacy in the interview process.

D.4 DATA COLLECTION

D.4.1 Survey Data

The economic survey questionnaires were administered once every two weeks to all sample households within each of the four original villages Their main purpose was to monitor both economic inflows and outflows of the family farming unit. Five questionnaires based on consumption, sales, purchases, amounts given and amounts received made up the basic biweekly interview in an effort to capture both goods and services as they passed through the household.

The basic five biweekly questionnaires were supplemented on a quarterly basis by the administration of livestock and on-farm storage censes. Baseline information on demographic variables within the family, field measures, and durable goods was also collected once, at the beginning of the study. Harvest data was collected for both the 1983 and 1984 agricultural years.

In addition to the biweekly and one-time questionnaires two special questionnaires were introduced. The first gathered information on changes in household composition over time and the second collected data to convert the local measuring units to their kilogram equivalents. Due to the dynamic nature of the household farming unit, outlined above, the household composition was monitored monthly to acquire data on size and composition changes over the course of the year. At the end of each month the members of the household who had been present for two weeks or more in the month were noted.

Many households were found to change their size over the course of the year which could greatly distort the production and consumption equivalents employed in the analysis. The monthly check on household composition allowed the research team to monitor household immigration and emigration, deaths, births, and visitors.

Local measuring units were weighed, for each household farming unit where possible, in order to establish kilogram conversions for both threshed and unthreshed cereals. It was necessary to have individual household conversion figures due to the large variation in size of similar measuring implements, both across and within villages. The

collection of such data proved less problematic when the team provided the threshed cereal for weighing because not all households kept an on-farm storage of all the threshed cereals. For the ratio of threshed to unthreshed cereals farmers with unthreshed cereals in stock where asked to remove their standard household measure and thresh the contents. Weights were taken before and after threshing to obtain the cereal threshing ratio for as many households as possible. These threshing ratios were averaged on a village basis. In all, a total of 13 survey questionnaires, summarized in Table D.1, were administered during the course of the fieldwork where data collection began in December 1983 and ran until December 1984.

Among the various members in each household those interviewed for the biweekly questionnaires were the head of the household, his wives, any other married or mature (20 years of age or older) males, married females of any age, widows and widowers. It was felt that these types of individuals represented the major market participants within the household. Each household was scheduled to be interviewed on a particular day with approximately 4 to 5 families interviewed per day. The best time to interview was early morning, late afternoon or around noon time as farmers are generally busy during the other times of the day.

The interviews themselves were performed by a Burkinabé interviewer stationed in each of the villages. As the agricultural season approached an assistant was added to each village because the farmers are harder to find during this time and the demands of the survey instruments were at their highest. A conscious effort was made to acquire female interviewers but no suitable applicants were available. However, one female assistant was employed and the subsequent information obtained from the female sample members also improved. All of the other interviewers and assistants were young males, 20-25 years of age, with between primary and secondary school education. In addition, college-educated supervisors were stationed in the regional capitals to oversee the data collection in the researcher's absence, fill-in for any interviewers that feil ill, and assist in the collection of market information and informal interviews.

TABLE D.1

SUMMARY OF THE QUESTIONNAIRES EMPLOYED

Questionnaire Number	Questionnaire Name	Main Purpose	Frequency of Administration
0	Village Census	Establish village demographics for sample selection	Once
1	Household Census	Sample household demographics: sex, age, ethnicity, etc.	Once
2	Field Measures	Area cultivated to each crop or crop mix	Once
3	On-Farm Storage	Quantity of foodstuffs stored over time	Quarterly
4	Harvest	Quantity of harvest	Yearly
5	Consumption	Quantity & source of foodstuffs consumed	Biweekly
6	Sales	Quantity, value, type of good, reason & location of sales	Biweekly
7	Purchases	Quantity, value, type of good, reason & location of sales	Biweekly
8	Amounts Given	Services, salaries, credit, gifts, and remittances given	Biweekly
9	Amounts Received	Services, salaries, credit, gifts, and remittances given	Biweekly
10	Change in Household Composition	Monitor household compositional changes	Monthly
11	Durable Goods	Wealth and asset measure	Once
12	Measuring Units	Convert local measures to kilograms	Once
13	Animal Census	Type, number, and owner of livestock	Quarterly

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

D.4.2 Price Data

Biweekly price data for the major cereal grains were collected in each of the village markets that were outlined in the markets section of site selections above. Because of the variation in measuring units used within and between markets, prices and weights were taken over time. The cereals chosen for price data collection in each region were dependent upon the crop mix of that region.

The units of measure recorded were also regionally specific. Both purchase and sale price per weight combinations were desired so that trader profit margins could be examined. A direct approach to this type of data collection was not always feasible as some traders were suspicious of our intentions. In those areas where trader acceptance of our study was low a third party, usually a villager and not the interviewer, was used to make cereal purchases and sales. In either case the cereal that was bought on one market day was stored and resold on the following market day. Because the net of sale and purchase weights was not zero this stock usually had to be supplemented by additional purchases. With those traders who were more accepting of our study, direct farmer to trader, and vice versa, transactions were recorded. Thus, the year long presence of the village studies in the various regions afforded the possibility of collecting a small time-series dataset on local cereal prices and weights in the markets affecting the sample farmers.

D.4.3 Informal Interviews

As discussed in the introduction to this chapter it was the intention of the research team to complement the quantitative survey and price data with qualitative insights through farmer and trader interviews. These interviews lasting from one and one half to two hours were guided by the data garnered from the economic questionnaires but were generally of a more open-ended nature. An attempt was made to touch on various thematic issues pertinent to the research but, as much as possible, the farmer or trader was left to talk about his or her own perception of the cereal grain market. Other market participants (OFNACER agents, cereal bank officials, etc.) were also interviewed.

The general purpose of the informal interviews was to give the researcher more information about individual farmer and trader circumstances. Through these interviews, the researcher would have greater insight into the interpretation of the numeric dataset (identification of outliers, traders in the sample, pensioners, etc.). The interviews, particularly with traders, were patterned after the market studies methodology but were employed on a smaller scale. This micro-oriented version of the market studies methodology, plus the more permanent nature of the village studies, allowed for a more intensive, rather than extensive, examination of local markets. Moreover, the utilization of a similar methodology accorded facile integration of village studies information with that of the market studies.

As the fieldwork proceeded it became apparent that in both surplus and deficit regions it was imperative to understand the nature and strategies of farm household income generation. In the deficit areas it was important to understand how farming households acquired the funds to buy the needed cereals. In the surplus areas the research team was interested in determining the role of cereal sales among all the possible household income generating activities. In collaboration with, and building upon, the work of the project anthropologist, a data collection technique using Polaroid photographs of farm household assets was designed. The immediate precursor of this technique was the anthropologist's own Marketing Preference Scale (MPS) as administered in Dankui.

With the institution of some modifications in the administration of this data collection instrument, and retention of the basic structural format, the MPS technique evolved into a methodology more suited to the economic demands of the research effort. The important structural changes were the addition of a photo denoting labor as a source of income generation and having the farmer first remove from his or her possibilities (i.e., photographs) any asset which he or she did not possess. Renamed the Sales Preference for Income Generation (SPIG) Survey, to distinguish it from the economist's more frequent use of the acronym MPS (i.e., Marginal Propensity to Save), and to describe its new-found use, this data collection instrument was administered in all four village sites.

The series of photographs of farm household assets included durable goods, agricultural produce, labor, loans, and remittances. These photographs, numbering around twenty, were easily adapted to reflect the particular village environment that may have influenced the income-generating possibilities available. The farmer was presented with the photos and asked to order them in preference of 'sale' to meet cash needs. Although certain limitations of the analysis of data collected in this manner are readily apparent (e.g., no possibility for temporal differences in sales preference if the survey is only administered once) the methodology does enhance the qualitative commentary offered by the farmer.

D.5 SUGGESTIONS FOR FUTURE METHODOLOGIES

Hindsight is always perfect vision and in the case of a research methodology allows us to reflect on what was useful and what could use modification in the research design. In this final section we hope to bring up some suggestions, that result from our experience, for any future researchers designing a similar research effort.

In the area of site selection the villages chosen for study can be too remote and inaccessible. When this is the case the research team can spend more time on the road than in the village itself. There is also the fatigue that results from extended travel, especially over unpaved roads, that reduces researcher efficiency and alertness in the field. In this respect the villages of study should not be more than 45 minutes travel (one-way) from the researcher's central location, in our case the regional capitals. This is not an argument for researchers to stay in the national capital and study only those villages within a 45 minute radius, but rather an argument for placing researchers in regional capitals and establishing a base of operations there.

At the village level itself a similar concern about the wastefulness of resources (researcher time, energy, gasoline, etc.) could be addressed by building a modest research domicile in or on the outskirts of the village for overnight and multiple day visits to the research sites. It is more efficient and productive, from both a research and economic basis, to stay in the village for longer periods than to commute. A good

program could be two weeks out in the field collecting data and two weeks at base analyzing, reflecting, and possibly redesigning existing research instruments or developing new methodologies. At the end of the study the structure could be turned over to the village, as an expression of gratitude for the villagers' support, to be used as they saw fit (e.g., meeting place, dispensary, cereal bank, etc.). Of course, the location and type of structure constructed would have to include villager input at the beginning of the selection process.

For the interviewers living in the village full-time the workload always seems to increase over time as the researcher adds more and more data requirements. One should always, in such a situation, stress quality and not quantity of information to be gathered. The only policy recommendations that result from mountains of low-quality data are low-quality policy recommendations, if not outright wrong ones. Therefore, a field interviewer should have no more than five families to interview in any one day with two days per week to make-up interviews missed due to farmer absence, illness or other unforeseen problems. These two make-up days could also be used for special projects such as market data collection, special questionnaires, and other village market visitations. This type of schedule for the field personnel would result in 20 families per interviewer per week. This results in four days of formal interviews, two days of special projects, and one day off. The field personnel would get only one day off as their daily schedules would rarely be a full eight-hour day due to farmer inavailability at certain times of the day. The make-up days should be staggered between the four days of formal interviews (i.e., two days of formal interviews, one make-up day, followed by two days of formal interviews and another day for make-up).

With one interviewer collecting data on twenty families per week, forty families could be interviewed if the data were collected on a biweekly basis. If a weekly format were followed a second interviewer would be required to obtain a forty-member sample. One female and one male interviewer would be the ideal combination, particularly in more traditional societies where females have restricted contact with males outside the family. Our experience with female interviewers was that they elicited more data, in both quantity and quality, from the female

sample members. This would also address the problem of most economic survey work of underreporting the 'female' economy in developing countries. A possible solution could be the interviewing of female sample members by the female interviewer. With this type of division of labor the families interviewed per day could be increased.

In addition to sensitizing the research methodology to the local roles of each sex it would be a marked improvement to mesh the timing of the research to the local unit of time measure. In most traditional rural societies it is the period between market days and not the seven-day week that provides the people with their temporal reference. Matching the frequency of administration of the questionnaires with an integer multiple of the local market cycle would improve participant recall and integrate the research into the rural routine for greater acceptance. In the Mossi areas of study (i.e., Mené and Bougouré) a three-day market cycle is the norm and in any one week two or three market days might occur. In such an environment of continually changing recall opportunities some aggregations and data were probably misreported.

Continuing the example within the Mossi areas, an integrated research design would work with two days of interviews, followed by research in the market on market day, then two more days of interviews, followed by a day off. This type of approach to data collection would coincide with the local market cycle. Each family would be informed that the interview would occur once every six days and two market opportunities would have passed since the last interview. Similar patterns for scheduling the research interviews around differing market cycles can be constructed if one does not restrict one's thinking to seven-day units of measuring time. Such integration with the local market cycle has the added benefit of increasing farmer availability. We found the hardest day to find farmers was the day of the most frequented local market. In this integrated design no formal farmer interviews are ever scheduled on market day.

Another method of increasing both the quality and quantity of data collected is to disaggregate the questions to be asked. Disaggregation refers to breaking-up general questions into a series of specific questions. For example, rather than asking if a participant in the study bought any cereals since the last interview ask the question for each of

the major individual cereal grains. A similar strategy can be employed with other major question categories such as animals, farm inputs, consumables, durable goods, etc. Such a list of disaggregated question cues should be listed directly on the field questionnaire to aid the interviewer's memory and insure that he or she asks the same questions of all sample members.

Finally, two items that could have made this research effort more efficacious: The methodology, once employed, proved to be weak in capturing farm household income. Although the 'sales' and 'amounts received' questionnaires were supposed to provide that information in theory, in practice full income data was not captured. The problem arose from farmer perception of what was a sale and what was an amount received. There was such a wide variety of income-generating possibilities that some did not seem to fit within our two question categories. Perhaps either a quantitative version of the SPIG methodology, or greater disaggregation of the 'inflow' questionnaires could remedy this fault. The SPIG survey could also be improved by applying it to the sample at three or four different times throughout the year to identify any temporal changes in sales preferences.

The other area of major concern is the measuring units used to arrive at kilogram equivalents of local measures. As was pointed out above individual household conversions were preferred due to the variability of measuring units across families and villages. However, this became an enormous task due to the plethora of units employed by villagers. Other problems encountered were that not all households had sufficient quantities of threshed and unthreshed grain to measure, some households were reluctant due to the possibility of losses while measuring, and some measuring units had been either lost or destroyed during the course of the year. All of these problems could be solved if a study standard unit for threshed and unthreshed cereals were issued to each sample household with replacements held in reserve. Participants would be given these units to keep and be asked to report all cereal transactions in terms of these units. Of course, they would have to be issued before the harvest and probably multiple copies of both the threshed and unthreshed units would have to be given to each household (possibly one each for each interviewee). For example, in our study the ubiquitous plastic or metal

bowl would be useful as a threshed measure and the locally constructed baskets as the unthreshed measure. Such an attempt at standardizing participant households with gifts of measuring units could be construed as a bonus to those families participating in the study. If some households continued to use their old measures they could be asked to determine the equivalent of their measures to those issued. The issued measuring units should not be the government official units due to the bias this might introduce in the transaction's data collected. If the sample villages became known as villages where everyone had access to government standardized units some traders might be less likely to transact business there. Such a village with perfect information and access to government standardized measuring units would not reflect the present market environment in Burkinabé villages.

APPENDIX D, continued

VILLAGE STUDIES QUESTIONNAIRES

LES CODES

A. GENERAL (toutes les fiches)

* specifier en marge
98 ne sais pas
*99 autre
00 non applciable

B. OUI/NON (00,01,04)

01 oui
02 non

C. SEXE (00,01)

01 masculin
02 feminin

D. SITUATION DE FAMILLE (00, 01)

01 marié, premiere fois
02 marié, deuxieme fois
03 celibataire
04 divorcé(e)
05 veuf(ve)
06 décédé(e)

E. ALPHABETISME (00)

01 analphabète
02 alphabetisé en Francais
03 alphabetisé en Arabe

04 alphabetisé en Francais et Arabe
05 alphabetisation fonctionelle

F. RELIGION (01)

01 Animiste
02 Musulman
03 Catholique
04 Protestante

ETHNIE/LANGUE (01/00)

01 Francais/Francaise
02 Mossi/More
03 Kurumba (Fulse)/Kourunfe
04 Peul/Foufoulde
05 Samo/Samogho
06 Hausa/Hausa
07 Bobo-Djoula/Djoula
08 Bwaba/Bwanu
09 Bobo-Fing/Bobo-Fing
10 Dafing/Dafing
11 Bissa (Busanse)/Busanga
12 Gourmantche/Gourma
13 Gourounsi/Goursi
14 Marka/Marka
15 Dagari/Dagari
16 Lobi/Lobiri
17 Senoufo/Senoufo
18 Dogon/Dogon
19 Rimaibe/)
20 0/Arabe
21 Bambara/Bambara
22 Asante/Twi
23
24
25
26
27
28
30

H. TYPE DE TRAVAIL OU ACTIVITE (01)

01 travail dans ses propres champs
02 travail salarié dans les champs
03 jardinage
04 ménage/travail de maison
05 élevage de son propre tropeau
06 élevage pour un propriètaire
07 pêche
08 chasse
09 vannerie
10 tissage
11 poterie
12 cordonnerie
13 bijouterie
14 confection de calebasses
15 confection de nattes
16 confection de chapeaux
17 couture
18 forge
19 menuiserie ou autre artisan du bois
20 boucherie
21 confection de briques
22 construction de greniers
23 maconnerie
24 construction ou forage de puits
*25 autre construction
26 collecte et vente du fumier
27 collecte et vente de bois
28 collecte et vente de paille et autre produit
29 battage des céréales
30 préparation et vente de bière
*31 petit commerce
*32 commerc3
33 mécanique
34 transport motorisé
35 location de charettes
36 location de boeufs
*37 autre location
38 guérisseur
39 griot
40 marabou/Imam/maître Coranique

41 pasteur ou catéchiste
42 école coranique
43 école secondaire
44 école primaire
45 pensionné
46 fonctionnaire
*47 autre travail salarié
48 tressage de corde
49 tressage de cheveus
50 berger/élevage pour concession
51 préparation et vente d'aliment
52 musicien
53 teinturerie
54 filage de coton
55 élevage de volailes
56 école agricole/FJA
57 service militaire
58 collecte et vente de karité
59
60 travail limité aux champs de la concession (pas de propres champs)

I. NIVEAU DE INSTRUCTION (01)

01 1 an
02 2 ans
03 3 ans
04 4 ans
05 5 ans
06 6 ans (CEP)
07 sixième
08 quatrième
09 cinquième
10 troisième
11 deuxième
12 première
13 terminale (le bac)
14 1 an université
15 2 ans université
16 3 ans université
17 plus de 3 ans université
18 école coranique
19 école militaire FJA

J. ACTIF/INACTIF/EMIGRE (01)

00 enfants moins de six ans
01 actif
02 temporairement inactif
03 inactif permanent
04 actif de passage
05 inactif de passage
06 émigré permanent envoyant
07 émigré permanent n'envoyant rien
08 émigré temporaire envoyant quelque chose
09 émigré temporaire n'envoyant rien
10 non plus un membre du ménage (divorcée)

K. EMPLACEMENTS DES CHAMPS OU RECIPIENTS DES CULTURES (02, 03)

01 dans la cour
02 dans une case
03 à corté de la concession
04 dans le village
05 dans un campement de culture
06 dans le champ
07 en brousse
08 dans un bas fond proche
09 dans un bas fond en brousse
10
11
12
13 à côté du village

L. ACQUISITION DE TERRES (02)

(* spécifier de qui et conditions d'usufruit)
01 hérité
*02 reçu en cadeau (autorité totale)
03 révendiqué car inoccupé
*04 echangé
*05 emprunté à long terme
*06 emprunté à court terme
*07 loué (specifier conditions de location
08 distribué par le gouvernement
09
*10 cédé pour exploitation à un member de la même concession (femmes, adolescents)
11 prérogative de la famille du chef

M. TYPE DE STOCKAGE (03)

01 grenier en paille (grand)
02 grenier en banco (grand) (nāni)
03 sac
04 canari
05 fût ou barique
06 fosse
07 panier
08 sur arbre, hangar, barre, poutre
09 tas
10
11
12 grenier en banco (petit) (nan ko ho)
13 grenier en paille (petit)
14 grenier en banco "Koeni"
15 sur échaffaudage

PRODUITS, OUTILS, MARCHANDISES

N1. Cultures (03-09)

001 jachère
002 sorgho rouge
003 sorgho blanc
004 petit mil
005 fonio
006 mais
007 riz paddy
008 riz
009 arachide
010 niebé
011 pois de terre
012 soja
013 haricot
014 igname
015 manioc
016 taro
017 patate
018 pomme de terre
019 gombo
020 oignon
021 tomate
022 aubergine
023 chou
024 courge
025 piment
026 calebasse
*027 fruits
028 tabac
029 coton
030 miel
031 sésame
032 semences diverses
033 hibiscus
034 oseille
035 da
036 autres fines herbes
037 noix de karité
038 néré
039 feuilles diverses
040 autres produits cueillis sur les arbres
041 paille ou tiges
042 fourrage
043 bois
044 farine de blé/mais/mil
045 carotte
046 boule d'acassa
047 datte
048 galette
049 beignet
050 melon
051 salad3
052 kapok
053 feuilles de baobab
054 soumbala
055 charbon
056 bouillie
057 couscous
058 noix de coco
059 Haricot vert
060 autres graines ou céréales de brousse (ex: graines d'épine)

N2. Animaux et Produits Animaux (05-09)

061 taureau 0-5 ans
062 taureau 5-10 ans
063 taureau 10 + ans
064 vache 0-5 ans
065 vache 5-10 ans
066 vache 10 + ans
067 agneau 0-1 an
068 agneau 1-2 ans
069 belier 2-5 ans
070 belier 5-10 ans
071 belier 10 + ans
072 brebis 2-5 ans
073 brebis 5-10 ans
074 brebis 10 + ans
075 chevreau 0-1 an
076 chevreau 1-2 ans
077 bouc 2-5 ans
078 bouc 5-10 ans
079 bouc 10 + ans
080 chèvre 2-5 ans
081 chèvre 5-10 ans
082 chèvre 10 + ans
083 âne pré-adulte
084 âne adulte
085 anesse pré-adulte
086 anesse adulte
087 porc pré-adulte
088 porc adulte
089 cheval
090 lapin
091 cobaye
092 poulet ou coq
093 pintade
094 pigeon
095 canard
096 dindon
097 oeufs
100 lait
101 peau
102 viande crue
103 viande cuite
104 fromage/beurre de lait
105 perdrix
106 mais CATHWELL/OFNACER
107 lait CATHWELL
108 poisson
*109 viande de brousse

110 sorgho US (aide d'urgence)

N3. Facteurs de Production (06-09)

111 terre
112 argent

113 outils agricoles à main (daba, houe, pioche, hache, machète, bêche, pelle, etc.)
114 sarcleur
115 butteur
116 rayonneur
117 semoir
118 tracteur
119 charette tombereaux (âne)
120 charrue à boeufs
121 charrue à âne
122 char à boeufs
123 joug
124 soins vétérinaires
125 chaine
126 corde
127 paniers
128 sacs
*129 autre recipients agricoles
130 fumier
131 engrais coton
132 engrais arachide
133 engrais maraîcher
134 poudre rouge
135 poudre blanche
*136 autre insecticide
*137 semences
138 pilon dameur
139 canari (jarre)
140 seau
141 insecticide
142 mortier
143 cherilles
144 cauri
145 fusul cartouche
146 pompe
147 puisette
148 graisse
149
150 hydromiel

N4. Marchandises (06-09)

151 kola
152 cigarettes
153 dolo
154 eau de farine de mil
155 café ou thé
156 autre boisson
157 pain ou biscuits/gataux
158 sel cuisine
159 sucre
160 huile de cuisine
161 beurre de karité
162 condiments (c.e.d. maggi)
163 plats cuisinés
*164 autres aliments
165 outils de cuisine
166 fournitures scolaires
167 piles
168 torche
169 lampe
170 radio
171 montre ou autre bijoux
172 machine à coudre
173 tissu ou pagne
174 indigo
175 fil
176 vêtements
177 chassures
178 nattes
179 savon
180 soins et medicaments commerciaux
181 soins et medicaments traditionnels
182 charmes et fétiches
183 transport/voyage
184 bicyclette
185 mobylette
186 pétrole ou mélange ou huile moteur
187 pneu ou chambre à air
188 autres pieces ou outils pour bicyclettes ou mobylettes ou charettes
*189 lot de marchandises diverses
190 pomade et d'autres produits
191 lait concentré en boîte
192 pour jeux
193 lits traditionelles en bois
194 porte traditionelles en bois
195 potasse
196 perfum
197 étoffe toffe
198 allumettes
199 éléments de construction
200 bon-bon
201 couteau
202 foulard
203 lâme lâ
204 bic
205 waré ou autre jeux
206 meuble de maison
207 oreillet
208 bière
210 soda ou sucerie
211 services (moulin, reparations, etc.)
212 pierre à l'écher (sel animaux)
213 matériel de tissage
214 peigne
215 moto
216 arbres
217 levure
218 tamarin
219 chapelet
220 aiguille
221
222
223
224
225
226
227
228
229
*230 livres

O. UNITE DE MESURE (03-10)

01 unité
02 mètre
03 kilo
04 livre
05 litre
06 plat
07 louche petite
08 louche moyenne
09 louche grande
10 boite de pâté
11 boite
12 gourde
13 calebasse
14 assiette locale
15 assiette Yoruba
16 tine locale
17 tine ORD
18 panier petit
19 panier moyen
20 panier grand
21 canari petit
22 canari moyen
23 canari grand
24 seau petit
25 seau moyen
26 seau grand
27 sac de 25 kg.
28 sac de 34 kg.
29 sac de 45 kg.
30 sac de 50 kg.
31 sac de 100 kg.
*32 autre sac
33 barrique
34 brouette
35 charette
36 morceau
37 sachet
38 paquet
39 boule
40 rouleau
41 tas (seulement pour marchandises
42 tresse ou grappe
43 fagot
44 tête
45 poignée
46 coudée
47 brassée
48 cuillerée
49 botte/balle
50 planche
51 bouteille
52 tubercule petit
53 tubercule moyen
54 tubercule grand
55
56
57
58 tonne
59 bassine
60 cube
61 dixième
62
63 1/2 tine
64 1/4 tine
65 carton (cartouche)
66
67 gobelet
68 bol
69 caisse
70 ecueille

P. FORME DES CEREALES (03-10)

01 non-battu, en coque, en tiges (c.e.d. non-transformé)
02 battu, sans coque
03 découtriqué
04 germé
05 germé
06
07 seché ou fumé
08
09
10 cuire

Q. FONCITON OU BUT DES CEREALES STOCKEES, ET DES VENTES, ACHATS, CADEAUX (03, 06-09)

01 bon prix
02 pour commerce
03 pour transformations (c.e.d. dolo, petits gateaux)
04 pour cadeaux
05 pour auto-consommation du ménage
06 pour les impôts
07 pour prélèvements ou dîmes musulmanes
08 pour frais scolaires
09 pour remboursement d'un prêt
10 pour épargne
11 pour réserve en prévision de mauvaises récoltes et de famine
12 pour salariés
13 pour invitations de travail
14 pour semences
15 pour fumier ou engrais
16 pour outils agricoles
17 pour autres occupations non-agricoles
18 pour acquisition ou accroisement du cheptel ou tropeau
19 pour acquisition des animaux
20 pour grigri
21 pour funerailles
22 pour circoncision ou excision
23 pour mariage ou financaille
*24 pour autre fête ou cérémonie
*25 pour autres besoins du ménage
26 pour envoi des fonds ou biers
27 pour maintenir des bonnes relations
28 pour remercier du prêt d'une terre
29 pour remercier du travail de quelqu'un
30 pour construir
31 pour remercier d'un service rendu
32 pour payer des médicaments
33 pour filage de coton
34 pour crédit

35 pour pensions
36 pour cotisations
37 hospitalité
38 Pour achat des céréales
39 pour transport ou voyage
40 pour bénédiction
41 aid d'urgence
42 pour sacrifice
43 pour bienfaisance
44 pour maraboutage
45 pour héritage
46 pour baptême
47 pour peser enfant
48 pour seins traditionels
49 pour commission
50 pour occupation agricole
51 pour fourriére

R. DISPOSITION DE LA RECOLTE (04)

01 vendue
02 vendue en herbe
03 stockée
04 consommée
05 donnée
06
07
08
09
10

S. LIEU DE TRANSACTION (06-10)

01 Côte d'Ivoire
02 Ghana
03 Mali
04 Niger
05 Ouagadougou
06 Tougan
07 Behui
08 Dinkena
09 KassaKongo
10 Sam
11 Donkomara
12 Gouran
13 Tikan
14 yé
15 Souma
16 Korombéré
17 Toumani
18 Sagara
19 Yarga
20 Yallé
21 Youba
22 Lougouri
23 Mimima Dowcé
24 Pello
25 Bougounam
26 Dinglà
27 Lossa
28 Ninigui
29 Ingané
30 Ouahigouya
31 Méné
32 Bougouré
33 Koumbri
34 Ziga
35 Bema
36 Berenga
37 Yako
38 Gourcy
39 Seguenega
40 Oula
41 Titao
42 Ségué
43 Bintigué
44 Djibo
45 Banh (Sagara)
46 Kalsagdo
47 Ranga
48 Ranga
49 Samba
50 Bobo-Dioulasso
51 Baré
52 Soumousso
53 Wara
54 Yéguesso
55 Kerou
56 Kosso
57 Lécéré
58 keribé
59 Sa
60 Doumbassa
61 Koumbara
62. Kouka
63 Solenzo
64 Soromi
65 Dedougou
66 Koudougou
67 Nouna (dimanche, mais tous les jours)
68 Tissi (pas de marché)
69 Dankui
70 Ouarkoye
71 Zaba (pas de marché)
72 Gassan (cinq jours)
73 Kougni (cinq jours)
74 Djimbaso (?)
75 Tchiookui (vendredi)
76 Fakena (dimanche)
77 Kekaba (vendredi)
78 Koena (jeudi)
79 Mookui (lundi)
80 Marché de la Volta Noire (jeudi)
81 Kumana (vendredi)
82 Safane
83 Pankui (pas de marché)
84 Doudou (dimanche)
85 Bina
86 Ourouna
87 Goni
88 Sono
89 Lonifiera
90 Koni
91 Lélé
92 Bissan
93 Poundoun
94 Sankui
95 Toma (cinq jours)
96 Grand Moura (cinq jours)
97 Douroula (cinq jours)

T. ACHETEUR/VENDEUR/DONNEUR/ BENEFICIAIRE (06-09)

01 OFNACER
02 ORD
03 COVOLCOM
04 SOFITEX
05 Service Elevage
06 Le gouvernement
07 groupement villageois
08 groupement naam
09 petit commerçant du village
10 moyen commerçant du village
11 grand commerçant hors du village
12 petit commerçant hors du village
13 moyen commerçant hors du village
14 grand commerçant hors du village
15 membre du ménage
16 membre de la concession
17 autre parent dans le village
18 ami trés proche, ami intime
19 camarade de même groupe d'age
20 autre personne (non-parent) dans le village
21 parent hors du village
22 autre personne (non-parent) hors du village
23 fonctionnaire
24 vendeuse/verseur
25 marchand paysan (menuisier, boucher, boulanger, etc.)
26 CDR
27
28
29
30 camarade ou ami(e)
31 personnel CRED
32 revendeuse/revendeur
34 mission religeuse
35

U. ENDROIT PRECIS (06, 07)

01 le champ
02 sa concession dans le village
03 concession d'un autre
04 sur la route/village
05 magasin
06 marché
07 sa maison en brousse
08 BC
09 Préfecture
10 ORD

V. TRANSFERT DE REVENU

01 versement, envoi (d'argent)
02 prêt ou paiement de crédit
03 salarie et paiement de services
04 cadeaux
05 impôts
06 frais scolaires
07 cotisation

00 RECENSEMENT VILLAGEOIS
(une fois seulement)

NOTES

- Le présent récensement s'intéresse à tout homme marié du village.

INSTRUCTIONS

0. Remplir la fiche en haut à gauche et à droite comme d'habitude. Donner les renseignements supplémentaires sur le chef de ménage (CM) -- le degré de parenté avec le chef de concession, son ethnie, sa religion et lieu de naissance. Si celui-ci habite un autre village que celui où l'étude est menée, inscrire le nom de la ville ou du village et de la sous-préfecture.

I. Inscrire le nom et prénom du CM suivis de ceux de la première femme et leurs enfants selon les plans arrêtés pour le récensement familial. Cependant, noter la différence majeure entre les deux: Le récensement villageois est basé sur les liens de parenté et non uniquement sur ceux de la co-habitation. Cela veut dire que les noms des divorcés, des décédés et des absents de la famille proche doivent être mentionnés.

Indiquer le décès par une croix (X) sur le numéro de code de l'individu à gauche. L'âge de la personne décédée devait être inscrit comme étant son âge à sa mort et une croix marquée sur le chiffre. En ce qui concerne les personnes décédées, les données qui suivent l'âge (6, 7, 8) ne sont pas nécessaires. Par ailleurs, le nom de la personne décédée n'est pas nécessaire.

Pour nos besoins, parmi les absents doivent être compris les fils et les filles du CM et ses femmes, ainsi que d'autres parents ou relations qu'ils estiment important d'inclure. L'interviewer doit poser la question de la manière suivante: Y-a-t-il quelqu'un d'autre qui d'habitude vit avec vous et n'est pas ici maintenant? Prendre tous les renseignements sur les absents.

La raison pour laquelle il faut mentionner les personnes divorcées, ou les époux (épouses) et enfants décédés, ainsi que les membres absents de la famille, etc... est de pouvoir identifier tous parent ou relations de ces mêmes personnes qui peuvent se trouver encore dans le ménage. Ne pas oublier de s'enquérir de cette possiblité lorsque ces cas se présentent.

Attention. Si vous découvrez un fils marié ou le frère du CM (ou tout autre homme marié qui habite le même village ou la même concession)notez les données correspondantes auxcolonnes I à 6. S'il s'agit de "résidence actuelle" inscrire "même concession" ou s'il habite une autre concession inscrire simplement le nom du village. Les renseignements qui restent (7 à IO) peuvent être omis étant donné que le même homme sera interviewé plus tard mais sur une fiche séparée en tant que CM lui-même.

00 (suite)

2. Les exemples du genre de termes à employer dans la définition de liens de parenté. r t donnés ci-dessous. Ces termes verbaux devraient être suivis d'un ou deux numéros progessifs (à partir de la marg uche) pour préciser le degré de parenté par rapport au CM ou, si nécessaire, par rapport à un adulte de plus proche parenté de la famille. (Voir un exempl d'un questionnaire rempli).

   Dans le cas où des personnes plus marginales sont concernées, c'est-à-dire la veuve du fils décédé ou un oncle du CM, prendre les renseignements simplement d'une manière descriptive.

Liens de parenté

Chef de maison (CM)	fille de ____/____	demi-soeur paternelle de ____
épouse No. I du CM	épouse de____/____	demi-soeur maternelle de____
épouse No. 2 du CM	père de ____	soeur de _____
épouse No. 3 du CM	mère de ____	etc.
épouse No. 4 du CM	demi-frère paternel de____	? -- personne inconnue, ou personne dont il n'est pas nécessaire de connaître le nom
ex-épouse du ____	demi-frère maternel de____	
fils du ____/____	frère de____	

3. SITUATION DE FAMILLE -- Inscrire le code approprié pour chaque individus (D)

4. Sexe -- inscrire le code approprié (C).

5. Age -- inscrire l'âge réel. En cas d'incertitude sur l'âge de l'individu, l'interviewer peut: demander l'année de naissance et calculer le nombre d'années et les inscrire; inscrire l'âge approximatif; se renseigner sur un événement majeur national ou régional qui s'est produit au moment de la naissance ou vers la période de sa naissance et calculer le nombre d'années en se basant sur cet événement. En ce qui concerne les personnes décédées, inscrire simplement l'âge au décès et, mettre une croix sur le numéro dans la case.

6. "Résidence actuelle" veut dire le village même ou, au cas où il y aurait des absents, le nom du village ou de la ville et de la sous-préfecture où ils habitent actuellement. Lorsque l'individu vit dans le même ménage que le CM, inscrire "même ménage". Lorsque l'individu vit dans la même concession mais dans un ménage différent, écrire "même concession".

7. Alphabétisme -- inscrire le numéro approprié (E).

8. Langues -- inscrire le numéro approprié (G). La langue maternelle, "M" doit être premièrement suivi des autres langues selon le niveau de connaissance.

00 (suite)

9. Sous cette section, inscrire simplement "oui" ou "non" (code B). Si l'informateur veut donner d'autres renseignements sur la quantité des biens que possède la famille, ces données peuvent être mentionnées entre parenthèses après le mot. Cependant, ne pas demander des précisions sur les nombres d'animaux.

10. Inscrire ces renseignements en mots. Il y a des possibilités telles que, chef de village , chef de quartier , chef des terres, chef des greniers, chef de forgerons, chef des cultivateurs, chef de lignes, chef des chasseurs, griot, chef de classe d'âge, chef d'une coopérative, guérisseur, et d'autres positions politiques et administratives.

CAS PROBLEMATIQUES

0I RECENSEMENT FAMILIAL
(une fois seulement)

NOTES

- Le présent récensement s'adresse aux personnes vivantes uniquement. Il est effectué avec le CM.
- Quelques-uns des renseignements (précédés d'une flèche comme ci-dessous indiqués) peuvent être copiés au préalable sur le récensement villageois initial.
- Cependant, se renseigner à la fin du récensement pour savoir si quelqu'un d'autre vit avec le répondant (penser surtout aux femmes) juste à titre de contre-vérification. En même temps, vérifier si tout le monde a été touché dans le cadre du récensement villageois.

INSTRUCTIONS

0. Inscrire verbalement le lien de parenté qui existe entre le CM et le chef de concession (ex: lui-même "petit frère" fils de la deuxième épouse du chef de concession). Etre explicite sur le lien de parenté de la même manière que pour le recensement villageois.

I. Assigner un numéro séquentiel à chaque membre du ménage. Il faut ajouter les noms des membres qui n'ont pas pu être recensés lors du recensement villageois ou qu'on a découvert par la suite.

→ 2. Inscrire le nom et prénom du CM et de sa première femme. Ensuite inscrire les noms et prénoms des filles et fils du CM et de son épouse No. I. Inscrire les enfants par ordre de naissance, filles comme garçons. Si c'est le prénom du fils qui est inscrit le premier, s'assurer que c'est bien lui qui est l'aîné et non la fille.

Inscrire le nom et prénom de la deuxième femme et répéter la procédure ci-dessus. Cette procédure s'applique aux autres femmes et à leurs enfants. Inscrire les noms de tout autre habitant, homme ou femme, vivant dans la maison.

Inscrire les noms de toute autre personne non encore inscrite qui appartient au ménage immédiat enquêté, mais qui est absent ou a émigré hors du village.

3. Inscrire l'ethnie de chaque membre de ménage. Inscrire le code (G).

4. Inscrire la religion de chaque membre de la maison! Inscrire le code (F).

→ 5. Inscrire l'état civil de chaque membre de ménage. Inscrire le code (D).

OI (suite)

→ 6. Inscrire le lien de parenté ou tout autre lien qui existe entre le CM et chaque membre du ménage. Etre précis. Ces renseignements seront codés plus tard.

→ 7. Inscrire le sexe de chaque membre de la maison. Inscrire le code (C).

→ 8. Inscrire l'âge de chaque membre de maison. Marquer le nombre d'années réel.

9. Inscrire le lieu de naissance et la sous-préfecture pour chaque membre de la maison.

IO. Inscrire -- par ordre d'importance -- le travail et les activités de chaque individu. La première d'une telle activité doit être inscrite comme l'activité "principale" c'est-à-dire "Quelle est l'activité qui vous permet d'entretenir une famille?" Inscrire le code (H). Ensuite inscrire les codes des autres activités importantes citées par l'informateur. Le terme "important" dans le contexte actuel se définit par rapport à la durée du temps passé pour mener l'activité au cours de l'année et non par rapport au montant du revenu qui en résulte. Chaque adulte devrait être consulté individuellement sur cette question si possible. Ne pas oublier de prendre des renseignements sur les activités commerciales. En ce qui concerne les émigrants, se reférer aux données sur le CM.

II. Noter toute activité supplémentaire passée et les compétences de chaque membre de ménage. On pourrait doubler le code (H) à ce niveau, ex:

couture	I 7
petit commerce	3 I

I2. Inscrire le niveau d'éducation formelle reçue par chaque membre (I). S'il y a eu plus d'un type d'instruction il sera nécessaire d'utiliser le double code, ex:

4 années d'étude primaire	0 4
Formation FJA	2 0

I3. Inscrire le status actif/inactif (J) de chaque personne vivant présentement dans la maison. Est considérée "active" toute personne (homme/femme) qui entreprend un travail ou des tâches contribuant à l'économie familiale (ex: agriculture, artisanat, travaux ménagers, commerce, etc.). Quant aux émigrants inscrire le code (J) aussi selon l'information donnée par le CM.

<u>CAS PROBLEMATIQUES</u>

02 INVENTAIRE DES CHAMPS ET JARDINS
(une fois seulement)

NOTES

- La présente fiche concerne individuellement chaque personne, qui au niveau du récensement familial, a indiqué que l'agriculture était l'une de ses activités majeures.

- Ne pas oublier les jardins. Ils doivent être considérés comme des champs. Premièrement les champs et ensuite les jardins d'une personne donnée doivent être classés ensemble sur sa fiche. Utiliser des fiches supplémentaires par individu si nécessaire. En outre, assigner des numéros d'ordre progressif aux différents champs et jardins d'une même personne.

- Si vous remarquez que les principales cultures de base, (sorgho rouge, sorgho blanc, petit mil) ne sont pas cultivées par un membre du ménage, prenez des informations. Demandez comment et où les membres de ce ménage obtiennent ces cultures de base. Inscrire les explications dans la marge.

INSTRUCTIONS

1. Assigner un numéro d'ordre progressif à chaque champ ou jardin nommé par chaque informateur.

2. Décrire verbalement l'endroit de chaque terrain en y inscrivant le code (K). Etre précis dans les descriptions verbales. Celles-ci seront basées sur votre propre examen visuel du champ, y compris les descriptions verbales données par l'informateur. En ce qui nous concerne, un "champ" est défini comme un terrain caractérisé par une culture dominante -- même si l'informateur le classe comme une partie d'un terrain voisin plus vaste sur lequel se trouvent les mêmes ou différentes cultures. L'information n'exclut cependant pas les champs avec cultures mixtes (voir ci-dessus). S'informer sur les champs en jachère.

3. Citer les noms des cultures de chaque champ par ordre d'importance sur le champ. Chaque culture doit être citée sur une ligne séparée. Si la culture est plantée dans le même champ qu'une autre, elle doit porter le même numéro dans l'ordre progressif et la même identification verbale.

4. Inscrire le nom de la personne ayant le droit de prendre des décisions sur les produits des champs -- c'est-à-dire la personne qui évalue les récoltes à l'avance selon la disposition du terrain. Inscrire le numéro progressif complet de la personne (basé sur sa fiche 01, du récensement familial). Le nombre complet se composa d'abord du numéro de la concession suivi du Numéro du ménage auquel l'individu se rattache et se termine enfin par le numéro progressif de l'individu dans le ménage.

5. Questionner sur la façon dont l'informateur a obtenu le droit d'utilisation de ce terrain (champ ou jardin) -- inscrire le code approprié (L).

02 (suite)

6. Inscrire le nom de la personne exerçant l'autorité suprême sur le terrain -- contrairement à celle qui a autorité sur la disposition des cultures qui s'y trouvent. "Autorité suprême sur le terrain" veut dire le pouvoir de louer ou prêter la terre sans consulter une autre personne. Inscrire le numéro progressif complet de la personne s'il est membre de l'échantillon choisi. S'il ne l'est pas, marquer 99.

7. Lorsque vous visitez chaque champ, faites un croquis de sa forme générale en indiquant toute particularité topographique sur une feuille séparée. On peut facilement esquisser dix à vingt champs au recto-verso de la feuille (voir échantillon). Inscrire le nombre progressif de chaque champ à l'intérieur de chaque croquis et ajouter le nom de l'informateur et son numéro progressif en haut.

CAS PROBLEMATIQUES

03 STOCKAGE DES CEREALES ET CULTURES DE RENTE
(trimestriel)

NOTES

- La présente fiche s'adresse à tous les membres du ménage ayant indiqué qu'ils ont un droit de décision sur les récoltes d'un ou plusieurs champs. Les mêmes personnes devraient être interviewés séparément et sur une fiche séparée.

- Inscrire chaque structure de stockage ou récipient individuel sur une ligne séparée.

- S'informer de grandes quantités de récoltes stockées. En particulier, se renseigner sur le propriétaire, la production et la disposition. Mettre les explications de ces quantités dans la marge ou au verso de la fiche.

- Vérifier visuellement et compter chaque grenier ou récipient, moyen de stockage dans chaque concession. Confronter le résul de vos comptes aux informations données par les personnes questionnées.
- Il peut y avoir des gens qui ne font pas de travaux champêtres ou ne s'occupent pas de la production d'un champ mais qui peuvent avoir des récoltes en stockage. S'assurer de cette possibilité, mentionner ces individus sur la fiche et chercher à savoir l'origine de ces récoltes.

INSTRUCTIONS

I. Assigner un nombre progressif à chacun des moyens de stockage cité par l'informateur.

2. Inscrire le nom du vrai propriétaire de la structure ou récipient de stockage. Dans la plupart des cas, ce sera l'informateur lui-même (elle-même). Cependant, si le propriétaire de la structure de stockage est une personne autre que le répondant (ex: si la structure est empruntée) marquer le nom de la personne sous "propriétaire du récipient ."

3. Inscrire le type de chaque grenier ou récipient de stockage et marquer le code (M). Noter aussi d'une manière descriptive, l'emplacement de chaque structure et marquer le code (K).

4. Inscrire le type de récoltes stockées dans chaque structure de stockage et marquer les codes (NI). Ne pas oublier d'inclure les récoltes de rente qui peuvent être stockées. Par ailleurs, il faut noter qu'il est possible de stocker plus d'une récolte dans un même grenier ou récipient. Dans des cas pareils, chaque récolte devrait être inscrite et codée sur une autre ligne.

03 (suite)

5. Enregistrer la quantité de chaque récolte stockée dans chaque récipient. Premièrement marquer le nombre des unités de mesure de chaque récolte cité par l'informateur. Deuxièmement, marquer le type de mesures en mot et le représenter par le code (O). Troisièmement, marquer la forme sous laquelle la récolte est stockée et porter le code (P).

6. Noter les deux derniers chiffres de l'année où le produit stocké a été récolté.

7. Inscrire le Nom de la personne qui a complète autorité (c'est à dire qui n'a pas besoin de consulter qui que ce soit) pour décider de l'utilisation de chaque culture stockée. Inscrire le nombre progressif complet de cette personne.

8. Citer par ordre d'importance décroissante les utilisations et fonctions prévues pour chaque culture stockée (code Q). (Voir instructions No. 8 de la fiche 04, "Récoltes des champs et jardins).

CAS PROBLEMATIQUES

04 RECOLTE DES CHAMPS ET JARDINS
(bi-hebdomadaire jusqu'à la fin des travaux de récolte)

NOTES

- La présente fiche s'adresse à tous les membres du ménage ayant indiqué qu'ils ont un droit de décision sur les récoltes d'un ou plusieur champs. Les mêmes personnes devraient être interviewés séparément et sur une fiche séparée. Questionner tout d'abord à propos des champs, et ensuite à propos des jardins de chaque personne.

- Des champs aux cultures mixtes où la récolte de chaque culture se fait à des périodes différentes devraient être traités comme si chacun des produits agricoles dans le champ était séparé. Cependant, toutes les récoltes d'un tel champ porteront bien sûr, le même numéro du champ.

INSTRUCTIONS

I. Marquer le numéro progressif de chacun des champs et jardins de l'informateur au fur et à mesure que vous prenez ces renseignements (se référer à la fiche No. 2 "Inventaire des Champs et Jardins").

2. Demander si la récolte de quelque culture que ce soit a été achevée sur chaque champ au courant des deux dernières semaines (A noter, cependant, qu'au moment de remplir la fiche, il faut s'informer sur tous les terrains de l'informateur afin de déterminer ceux qui ont été déjà récoltés avant le démarrage du projet dans le village). Inscrire "oui/non" code (B). Si "oui" (c'est à dire, la récolte d'une culture a été effectivement achevée sur le champ en question), continuer l'interview en remplissant les colonnes suivantes. Si "non", ne pas continuer le questionnaire à propos de cette culture sur ce champ et tirer donc un trait sur la ligne la concernant avant de passer soit à une autre culture sur le même champ (si c'est le cas), soit à un autre champ.

3. Demander le jour où l'informateur a terminé la récolte du champ/jardin. Inscrire le code "du jour" approprié (voir le calendrier).

4. Demander le jour où l'informateur a commencé la récolte du champ/jardin. Inscrire le code "du jour" approprié.

5. Marquer le nombre de jours mis pour terminer la récolte. Ce chiffre peut ne pas être toujours égal à la différence entre les renseignements retenus aux numéros 3 et 4 ci-dessus. Exemple: le chiffre en question sera plus petit si la récolte n'est pas faite dans les jours consécutifs à cause des pluies, fêtes, congés, maladies, etc.

6. Noter le nom du ou des produits agricoles récoltés sur chaque champ/jardin. Inscrire le code (NI).

   Ne pas oublier qu'il est possible de récolter plus d'un produit agricole sur un terrain donné. Dans de pareils cas, chaque produit doit être inscrit et codé sur une ligne séparée.

04 (suite)

7. Marquer la quantité de chaque produit récolté sur chaque terrain. Premièrement enregistrer le nombre d'unités de mesure cité par l'informateur pour chaque produit. Deuxièmement le type d'unité de mesure en mots et codé (O). Troisièmement, noter la forme sous laquelle la récolte est stockée et mettre le code (P).

8. Demander ce que l'informateur envisage de faire des quantités récoltées. inscrire le (s) code (s) (R). Il est possible que les récoltes collectées serviront à plus d'une fin. Dans de tels cas les différents usages devraient être inscrits dans les cases réservés aux codes par ordre d'importance. Cet ordre sera défini par les quantités relatives de chaque récolte destinées à un usage donné. La plus grande quantité disponible sera citée en premier lieu, et ainsi de suite par ordre d'importance décroissante.

9. Si l'informateur a stocké des produits récoltés, marquer le numéro progressif complet de la structure ou récipient de stockage.

10. Marquer le nom de la personne qui a l'autorité de déterminer la disposition des quantités récoltées (pas le propriétaire de la structure de stockage bien que ce soit d'habitude la même personne). Inscrire le numéro progressif complet de l'individu.

11. Marquer la lettre "T" pour temporaire ou la lettre "P" pour permanent pour refléter le type de structure ou moyen de stockage cité au No. 9 ci-dessus. Les récipients temporaires seront généralement ceux situés dans les champs pour le stockage à court terme.

CAS PROBLEMATIQUES

05 CONSOMMATION DES CEREALES, CULTURES ET PRODUITS ANIMAUX
(bi-hebdomadaire)

NOTES

- Cette fiche s'adresse à chaque adulte féminin membre du ménage chargée de préparer la nourriture. Chaque femme doit être interviewée séparement et sur une fiche séparée.

- "Consommation" ici porte sur la bière et la nourriture, préparées et bue /mangée dans le cadre des activités du ménage.

- Faire attention aux larges quantités non caractéristiques de consommation de bière et de nourriture. Ces quantités peuvent concerner les invitations de travail,les fêtes ou autres évènements spéciaux. Se renseigner à fond sur la nature de ces évènements et inscrire l'information au verso de la fiche.

- Ne pas oublier de se renseigner non seulement sur la consommation des céréales mais aussi sur celle des cultures de rentes (ex: arachides, pois de terre, riz, manioc, pomme de terre, haricots) et produits animaux (ex: viande, oeufs, lait, formage).

INSTRUCTIONS

1. Marquer les différentes récoltes ou produits préparés par l'informatrice pour la consommation de son ménage. Inscrire les codes correspondants (N1 et N2).

2. Marquer la quantité de chaque récolte ou produit préparé. A noter qu'en ce qui concerne les produits céréaliers, l'informatrice devrait être encouragé à donner ou à traduire sa réponse en termes de quantités de grains. Marquer le nombre d'unités de mesure cité par l'informatrice pour chaque récolte ou produit. Ensuite noter le type d'unité de mesure en mots et le code (O). En dernier lieu, noter la forme sous laquelle la récolte ou le produit est cité et le code (P).

   NOTE: Le code "P" désigne seulement les produits céréaliers . Pour les autres récoltes et produits, écrire simplement leur forme en toutes lettres dans l'espace réservé et inscrire le code (00), "non applicable".

3. Inscrire le nom et le lieu de parenté (au besoin) si cela existe entre la personne auprès de laquelle l'informatrice a obtenu les denrées alimentaires qu'elle a préparées. peut être elle-même ou son mari, une co-épouse, une amie, un membre aîné de la concession, etc. Inscrire le numéro progressif complet. Avoir des informations sur l'origine de la denrée alimentaire -- c'est-à-dire si elle était produite sur place, achetée ou obtenue comme cadeau ou échange, etc.

05 (suite)

4. En ce qui concerne les céréales ou autres récoltes prélevées à partir des structures ou récipients de stockage, identifier le genre de structure récipient où les prélèvements ont été faits. Inscrire le numéro progressif complet de la structure ou du récipient en se basant sur la fiche 03 "Stockage des Céréales et Cultures de Rentes".

CAS PROBLEMATIQUES

06 VENTES
(bi-hebdomadaire)

NOTES

- Ce questionnaire est mené auprès de chaque membre de l'échantillon pris individuellement à propos des ventes ou échanges de quelque sorte que ce soit effectués (ou non) au cours des deux dernières semaines. Si l'informateur dit n'avoir pas fait de ventes ou échanges ou cours de la période précitée, remplir les parties gauche et droite en haut de la fiche comme d'habitude et faire une grande croix (X) sur le reste.

- La fiche a l'intention de servir de guide pour des transactions non monétaires et monétaires. Ne pas oublier de demander les deux.

- A noter que le format de la fiche (et les quatre autres qui suivent -- 07, 08, 09 et I0) est à "double niveaux" c'est à dire qu'il y a cinq lignes par page dont chaque ligne contient des questions qui continuent sur le niveau "inférieur". S'assurer que les données citées à la ligne OI au niveau supérieur se poursuivent à la ligne OI correspondante au niveau inférieur. Cette procédure s'applique aux lignes 02 à 05.

- Ne pas oublier de se renseigner sur les différentes catégories possibles des ventes et échanges citées en haut de la fiche sous le mot "Produit".

- Etre vigilant en ce qui concerne la sur-ou sous-évaluation des données indiquées par l'informateur à propos de chaque vente ou échange. Dès que vous soupçonnez l'un ou l'autre cas, notez le dans la marge.

- Attention, le chiffre dans la colonne de la valeur monétaire, (Valeur) et (ce qui reste à payer), doit remplir complement toute la place réservée à cet usage. Les cases restées inoccuppées sur sa gauche par le chiffre de la valeur monétaire indiquée, seront donc remplies par des zéros. (Il en sera de même pour les fiches 07, 08, 09 et I0).

INSTRUCTIONS

I. Le numéro de ligne de chaque vente/échange a été déja inscrit pour vous sur la feuille. Lorsque le nombre de transactions pour un individu donné s'étale sur une période bi-hebdomadaire et dépasse cinq, utiliser simplement des feuilles supplémentaires et continuer de faire le numérotage des lignes à partir de six. Ecrire d'une manière claire et appliquée sur les chiffres allant de OI à 06 déjà marqués.

2. Sur quoi porte les ventes et les échanges que l'informateur a effectués au cours des deux dernières semaines? Marquer chaque denrée sur une ligne séparée et noter le code (NI-N4).

3. Marquer le nom du propriétaire de la denrée vendue ou échangée. Il peut s'agir ou non de l'informateur lui-même. Inscrire le numéro progressif complet de la personne.

06, (suite)

4. Marquer la quantité de chaque denrée vendue/échangée. Premièrement inscrire le nombre d'unités de mesure de la denrée citée par l'informateur. Deuxièmement, inscrire le type d'unité de mesure en mots et le code correspondant (O). Troisièmement, marquer la forme de la denrée en mots à l'endroit réservé. Concernant les céréales, marquer le code(P). Quant aux autres denrées, inscrire simplement le code 00, "non applicable".

5. Si la denrée vendue/échangée était une céréale, demander l'année de sa récolte. Inscrire les deux derniers chiffres de l'année de récolte. Si la denrée n'était pas une céréale écrire simplement 00, "non applicable" dans cette colonne.

6. Noter le type de paiement dans la transaction. Inscrire le code (N1-N4). Le mode de paiement peut être sous forme monétaire ou non monétaire (ex: prendre du lait contre des céréales. Ensuite, noter la valeur monétaire de la transaction. La valeur monétaire des ventes sera en CFA. En ce qui concerne les transactions non monétaires évaluer la valeur en CFA selon les informations de l'informateur. Les estimations porteront sur la quantité totale de la denrée que la personne a utilisée dans les transactions. Pour les transactions monétaires, demander si une partie du prix de la vente ou de l'échange reste encore à encaisser par l'informateur. Si c'est le cas, noter le montant qui reste encore impayé -- Pour les transactions non monétaires, inscrire 000099 et ajouter une note explicative dans la marge ou au dos du questionnaire.

7. Le numéro déjà inscrit ici correspond au numéro de la même transaction au niveau "supérieur" de la fiche.

8. Marquer la raison pour laquelle l'informateur a vendu/échangé la denrée. Inscrire le code (Q).

9. Noter le nom de la ou des autres personnes impliquées dans la transaction -- C'est-à-dire la ou les personne (s) qui ont acheté/reçu la marchandise de l'informateur. Noter le numéro progressif complet de la personne.

10. Mentionner le lien de parenté, le lien de parenté fictif ou autre lien social (ex: camarade du même age) qui existe entre l'informateur et l'autre partie de la transaction. Décrire verbalement le lien de parenté dans l'espace fourni. Etre précis. Les renseignements seront mis en code plus tard.

11. Inscrire le nom du village ou de la ville où la transaction a eu lieu. Mettre le code (S).

12. Inscrire la localité exacte où la transaction a eu lieu à l'intérieur du village ou de la ville cité (e) au numéro 11 ci-dessus. Marquer le code (U)

CAS PROBLEMATIQUES

07 ACHATS
(bi-hebdomadaire)

NOTES

- A cette fiche s'appliquent les mêmes notes que celles de la fiche 06 "Ventes" mais en considérant cette fois-ci les achats de l'informateur et non plus ses Ventes.

INSTRUCTIONS

Suivre les mêmes instructions que pour la fiche "Ventes", mais en les appliquant cette fois-ci aux achats des personnes questionnées.

CAS PROBLEMATIQUES

08 CADEAUX DONNES
(bi-hebdomadaire)

NOTES

- La présente fiche s'adresse individuellement à chaque membre de l'échantillon pour lui demander s'il a ou non donné des cade de toute nature au cours des 2 dernières semaines. Si un informateur dit n'avoir pas fait de dons au cours de la période citée, remplir simplement les parties gauche et droite du haut de la fiche comme d'habitude et faire une croix (X) sur le re

- La fiche a deux niveaux aussi.

INSTRUCTIONS

I. Le numéro de la ligne de chaque don a été déjà rempli pour vous.

2. Citer les dons faits par l'informateur au cours des deux dernières semaines sur des lignes différentes. Porter le code (NI-N4). Utiliser (et renuméroter) des feuilles supplémentaires si nécessaire.

3. Inscrire le nom du propriétaire du don.. Marquer le numéro progressif complet de la personne. Il est fort possible que ce soit l'informateur lui-même.

4. Noter la quantité de chaque denrée. Premièrement, marquer le nombre d'unités de mesure de chaque don cité par l'informateur. Deuxièmement, marquer le type d'unité de mesure et le code (O). Troisièmement, inscrire en mots la forme de l'article dans l'espace fourni. Concernant les céréales, marquer le code (P). Les autres denrées porteront le code 00 "non applicable".

5. Marquer les estimations en valeur monétaire de chaque don faites par l'informateur en FCFA. Si l'informateur est réticent quant aux renseignements sur les estimations, ne pas insister. Marquer plutôt ce que vous devinez comme étant "la valeur appropriée" en vous basant sur les prix en cours sur le marché à partir des informations recueillies lors des interviews et autres. Faire une étoile assez visible dans la marge droite après la colonne pour indiquer que les estimations sont faites par l'interviewer que vous êtes et non par l'informateur.

6. Le numéro déjà marqué ici correspond au numéro de la même transaction au niveau "supérieur" de la fiche.

7. Noter la raison pour laquelle l'informateur a fait ce don et le code (Q). A remarquer, cependant, que donner un genre de réponse qui veut dire en sorte ceci: "pour faire un don" ne suffit pas. Demander des détails.

8. Marquer le nom du bénéficiaire du don. Inscrire le numéro progressif complet de la personne.

08, (suite)

9. Noter le lien de parenté, le lien de parenté fictif ou autre lien social d'importance (ex: camarade du même âge) qui existe entre l'informateur et le bénéficiaire du don. Décrire verbalement ce lien de parenté à l'endroit réservé. Etre précis. Ces renseignements seront mis en code plus tard.

IO. Marquer le nom du village ou de la ville où le don a été effectué. Inscrire le code (S) .

II. Marquer la localité exacte située à l'intérieur du village ou de la ville cités au numéro IO ci-dessus où le don s'est effectué.

CAS PROBLEMATIQUES

09 DONS RECUS
(bi-hbdomadaire)

NOTES

- Les mêmes notes que celles de la fiche 08 "Cadeau reçus" sont applicables ici, mais la seule différence est qu'il s'agit des dons dont l'informateur a bénéficié et non ceux que lui-même a faits qui feront l'objet des enquêtes.

INSTRUCTIONS

Les "Instructions" tout comme les notes suivent la même procédure appliquée à la fiche 08 mais portent sur les dons reçus par l'informateur.

CAS PROBLEMATIQUES

IO. PRIX ET QUANTITE DES CEREALES ET DES CULTURES VIVRIERES

NOTES

- Ce questionnaire doit s'effectuer auprès de IO à I5 commerçants différents, une fois qu'ils ont effectué une vente. Ainsi les questions se rapportent à la transaction précédant immédiatement l'intervention de l'enquêteur. Il faut questionner les commerçants de céréales et de cultures vivrières les plus importantes dans la région où vous êtes Mais la priorité doit être accordée aux transactions concernant les céréales en general, y compris toutes sortes de céréales.

- Ce questionnaire doit prendre en compte à la fois les transactions monétaires et les transactions non monétaires. Il faut s'assurer que tous types de transaction ont été notés.

- Aucun nom, que ce soit celui du vendeur ou celui de l'acheteur n'est requis. Cependant, il est important de connaitre les noms des commerçants qui fréquentent ce marché.

- Soyez vigilants à propos d'une sous-évaluation ou surévaluation des transactions dans les réponses du commerçant vis-à-vis des valeurs citées pour chaque vente ou échange. Quand l'une ou l'autre de ces réponses vous semble suspecte, notez le dans la marge.

INSTRUCTIONS

I. Le nombre progressif de chaque transaction apparait déjà à l'extrême gauche de la fiche

2. Inscrire le village ou la ville de résidence actuelle ainsi que la sous-préfecture du vendeur. Nous ne demandons pas le village de naissance! Dans la case réservée au code, inscrire le code correspondant au statut et catégorie du commerçant questionné (T).

3. Inscrire le type de céréale ou culture vivrière faisant l'objet de la transaction et entrer le code approprié (NI, N2).

4. Noter la quantité et le prix à l'unité des biens vendus ou échangés. Tout d'abord, inscrire le nombre d'unités de mesure du bien échangé ou vendu par la personne questionnée. Ensuite, inscrire le type d'unité de mesure en toutes lettres, et inscrire le code approprié (O). Enfin, écrire en toutes lettres la forme dans laquelle les biens ont été négociés. Pour les céréales, entrer ensuite le code approprié (P). Pour les cultures de rente, inscrire alors simplement 00, "non applicable". Dernièrement, inscrire le prix à l'unité du bien dans l'unité dans laquelle la vente ou l'échange se sont effectués.

IO, (suite)

5/9 Noter toutes informations supplémentaires ou les transactionsqui n'ont pas été mentionnées dans d'autres secteurs du questionnaire. Par exemple, inscrire le nom d'un commerçant rencontré fréquemment, ou commenter une transaction typique

6. Le nombre progressif correspondant à la continuation de la ligne est une simple répétition des nombres progressifs figurant dans la colonne I .

7. Inscrire le paiement reçu par le vendeur des biens en question. Tout d'abord, noter si le paiement a été effectué immédiatement ou si du crédit a été inclu dans la transaction. Si le paiement a été immédiat, noter le type de paiement reçu, monétaire ou non monétaire. Entrer le code approprié pour le type de paiement (NI-4). Ensuite, inscrire la valeur du paiement reçu. Pour l'argent liquide, inscrire la somme en FCFA. Pour les transactions non monétaires, inscrire la valeur estimée par le vendeur de ce qu'il a reçu en échange de ces biens.

   Si la transaction a impliqué un crédit, noter quel type de crédit, c'est à dire, monétaire ou non monétaire. Entrer le code approprié (NI-4). Ensuite, noter la valeur du crédit accordé. Pour le crédit monétaire, indiquer la somme exacte en FCFA; pour le crédit non monétaire, noter la valeur en FCFA estimée indiquée par le vendeur pour le crédit accordé. Finalement, inscrire la nombre de jours pour lequel le crédit a été accordé.

8. Noter le village ou la ville de résidence actuelle et la sous-préfecture de l'acheteur, et entrer le code "le plus approprié" (T) pour décrire cet acheteur. Cette information peut aussi être obtenue auprès de l'acheteur.

CAS PROBLEMATIQUES

RECENSEMENT DU VILLAGE

00
F V C M DATE

Interview reviewed ___
Lieu de l'entretien _____
Enquêteur _____
Autres assistants _____

Relation du CM au chef de concession _____ Ethnie CM _____ Religion CM _____ Village de naissance du CM _____

No Pro	1 Nom, Prenom	2 Relations de Parenté	3 SF	4 Sexe	5 Age	6 Résidence Actuelle	7 Alpha-bétisme	8 Langues M	1	2	3	4
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												

9
Le ménage possède

___ charrue bovine
___ charrue asine
___ charrette
___ bicyclette
___ mobylette
___ moto
___ bétail á eux même
___ bétail á eux même plus
___ bétail á garder
___ bétail á garder seulement
___ seulement les boeufs pour la charrue

10
Autres commentaires, par ex: quelque titre spécial du CM

_____
_____
_____
_____
_____
_____
_____
_____
_____

RECENSEMENT DU MENAGE

01
F ___ V ___ C ___ M ___ DATE _____

INTERVIEW REVIEWED ___
Lieu d'entretien _____
Repondeur _____
Enquêteur _____
Les autres qui assistaient à l'entretien _____
Quartier _____

_____
Relation du CM au Chef de Concession

_____
Nom du Chef de Concession

1	2	3	4	5	6	7	8	9	10	11	12	13
No. Preg du Memb	NOM, Prenom	Ethn.	Rél.	S F	Lien de Parenté au Chef du Ménage	Sexe	Age	Village de Naissance / Sous-Préf.	Activités Importantes	Act Pas	Niv Ins	Act Ina Emp

RENSEIGNEMENTS DES CHAMPS

02 / F V C M DATE

Qui a mesuré:

No. du Champ.	Emplacement	Detenteur du Culture	Acq. de Terre	Responsable du Terrain

Utilisation d'intrants		
Fumure	Engrais	Attelée

Culture	1983	(N)	1982	(N)
ere 1				
ere 2				
ere 3				

Mesures		
Perimet	Erreur	Superficie

Mesures de Champs

Côté	Angle	Longeur	Côté	Angle	Longeur	Côté	Angle	Longeur
01			09			17		
02			10			18		
03			11			19		
04			12			20		
05			13			21		
06			14			22		
07			15			23		
08			16			24		

Faire un Croquis du Champ

CEREALES ET CULTURE DE RENTE STOCKEES

03 / F ___ V ___ C ___ M ___ DATE ___

INTERVIEW REVIEWED ___
Lieu d'entretien ___
Repondeur ___
Enquêteur ___
Les autres qui assistaient à l'entretien ___

1	2	3		4	5			6	7		8
No. Produ ré.	Propriet. du Récip.	Moyen de Stockage		Culture(s)	Quantité			An	Détenteur	No. Prog. du Membre	Fonction
		Type	Emplacement		No.	Unité de Mesure	Forme de Culture				

RECOLTE DE CHAMPS ET JARDINS

04 / F / V / C / M / DATE

INTERVIEW REVIEWED __
Lieu d'entretien _____
Repondeur _____
Enquêteur _____
Les Autres qui assistait
a l'entretien _____

1	2	3	4	5	6	7			8	9	10		11
No. Proc de Ter	Re-colte Ter	Quand Fini	Quand Comm	Com Bien du Sol	Culture(s)	Quantité			Vendu/ Stocké/ Consommé/ Donné	No. Prog. de Recip.	Détenteur	No. Prog. de Membre	T ou P
						No.	Unité de Mésure	Forme de Culture					

CONSOMMATION DE CEREALES, DE CULTURE DE RENTE ET DE PRODUIT ANIMAUX

03 / F V C M DATE

INTERVIEW REVIEWED ___
Lieu d'entretien ___
Enquêteur ___
Les autres qui assistait
a l'entretien ___

1	2		3				4		5	
			Quantité							
Nom, Prenom du Repondeur	Culture(s) ou Produit(s)	(N)	No.	Unité de Mesure	(O)	Forme de Cult/Prod.	(P)	Fourni Par Qui	No. Prog. de Membre	De Quel Grenier	No. Prog. de Récip.

LES VENTES

06 / F ___ V ___ C ___ M ___ DATE

Produit:
- ____agricole
- ____de cueillette
- ____animaux
- ____transformé
- ____artisanal
- ____autre

INTERVIEW REVIEWED ___
Lieu d'entretien _____
Rapondeur _____
Enquêteur _____
Les autres qui assistait à l'entretien _____

1	2		3		4				5	6			
					Quantité					Paiement Reçu			
No. de Lig	Produit Vendu	(N)	Propriétaire	No. Prog. du Prop.	No.	Unité de Mesure	(O)	Forme de Produit	(P)	An	Bien Echangé	(N)	Valeur Totale	Ce Qui Reste à Payer
01														
02														
03														
04														
05														

7	8		9		10	11		12		13
No. de Lig	But de Vente	(Q)	Acheteur	(T)	Relation Avec Vendeur	Lieu de Transaction	(S)	Endroit Précis	(U)	Date
01										
02										
03										
04										
05										

LES ACHATS

07 / F ___ V ___ C ___ M ___ DATE _____

Produit:
- ____agricole
- ____de cueillette
- ____animaux
- ____transformé
- ____artisanal
- ____autre

INTERVIEW REVIEWED ___
Lieu d'entretien _____
Repondeur _____
Enquêteur _____
Les autres qui assistait à l'entretien _____

1	2		3		4				5	6		
					Quantité					Paiement Donné		
No. de Lig	Produit Acheté	(N)	Propriétaire	No. Prog. du Prop.	No.	Unité de Mesure	(O)	Forme de Produit	(P)	An	Bien Echangé (N)	Valeur Totale	Ce Qui Reste à Payer
01													
02													
03													
04													
05													

7	8		9		10	11		12		13
No. de Lig	But de Achat	(Q)	Vendeur	(T)	Relation Avec Acheteur	Lieu de Transaction	(S)	Endroit Précis	(U)	Date
01										
02										
03										
04										
05										

MONTANTS DONNES

08 / F ___ V ___ C ___ M ___ DATE ___

INTERVIEW REVIEWED ___
Enquêteur ___

___ ENVOIS DONNES (01)
___ Céréales ___ Famille hors du village
___ Argent ___ Autres
___ Biens

___ REMBOURSEMENT DE CREDIT (02)
___ Céréales ___ Parenté ___ Facteurs de production
___ Argent ___ Non-Parenté ___ Biens de consommation
___ Biens ___ Commerçant
___ Groupement

___ SALAIRES/SERVICES/TRAVAIL PAYES (03)
___ Céréales ___ Travail agricole
___ Argent ___ Travail non-agricole
___ Biens ___ Services Payés

___ CADEAUX DONNES (04)
___ Céréales ___ Membre de famille
___ Argent ___ Membre du village
___ Biens ___ Personne hors du village

___ AUTRES
___ Impots (05) ___ Frais Scolaires (06) ___ Cotisations (07)

1 Type de Transfert de Revenu (V)	2 Donateur de Transfert avec no. progressive	3 Bien Transféré (N)	4 QUANTITE NO.	Unité (O)	Fra. (F)	5 Valeur de Transfert	6 But des Transferts de Revenu (O)

MONTANTS RECUS

INTERVIEW REVIEWED _____
Enquêteur _____

09 / F ___ V ___ C ___ H ___ DATE _____

___ ENVOIS RECUS (01)
___ Céréales
___ Argent
___ Biens
___ Membre du Men/Conc
___ Famille hors du village
___ Autres

___ SALAIRES/SERVICES/TRAVAIL RENDU (03)
___ Céréales
___ Argent
___ Biens
___ Travail agricole
___ Travail non-agricole
___ Services rendus

___ PRETS DE CREDIT (02)
___ Céréales
___ Argent
___ Biens
___ Parenté
___ Non-parenté
___ Groupement
___ Commerçant
___ Facteurs de Production
___ Biens de consommation

___ CADEAUX RECUS (04)
___ Céréales
___ Argent
___ Biens
___ Membre de concession
___ Membre du village
___ Personne hors du village

1 Type de Transfert de Revenu (V)	2 Bénéficiaire de Transfert avec no. progressive	3 Bien Transféré (N)	4 QUANTITE			5 Valeur de Transfert	6 But des Transferts de Revenu (Q)
			NO.	Unité (O)	Fm (P)		

12 / F V C M DATE

UNITES DE MESURE

INTERVIEW REVIEWED___
Lieu d'entretien_____
Enquêteur_____
Repondeur_____
Les autres qui assistaient
à l'entretien_____

1	2	3	4	5			6
Unité de Mesure Utilisée (O)	Culture (N)	Forme (P)	Unités par Pesée	Poids à Chaque Pesée			Poids à Vide
				ere 1	eme 2	eme 3	

RECENSEMENT DU CHEPTEL

11
F ___ V ___ C ___ M ___ DATE _____

INTERVIEW REVIEWED_____
Lieu d'entretien_____
Enquêteur_____
Repondeur_____
Les autres qui assistaient
à l'entretien_____ _____

TYP.	1 Animaux	(N2)	2 Detenteur	No. Prog. du Detent.	3 Quantité	4 Detenteur	No. Prog. du Detent.	5 Quantité	6 Berger	7 CB
Bovine	taureau 0-5 ans	0 6 1								
	taureau 5-10 ans	0 6 2								
	taureau 10 ans	0 6 3								
	vache 0-5 ans	0 6 4								
	vache 5-10 ans	0 6 5								
	vache 10 ans	0 6 6								
Ovine	agneau 0-1 an	0 6 7								
	agneau 1-2 ans	0 6 8								
	belier 2-5 ans	0 6 9								
	belier 5-10 ans	0 7 0								
	belier 10 ans	0 7 1								
	brebis 2-5 ans	0 7 2								
	brebis 5-10 ans	0 7 3								
	brebis 10 ans	0 7 4								
Caprine	chevreau 0-1 an	0 7 5								
	chevreau 1-2 ans	0 7 6								
	bouc 2-5 ans	0 7 7								
	bouc 5-10 ans	0 7 8								
	bouc 10 ans	0 7 9								
	chevre 2-5 ans	0 8 0								
	chevre 5-10 ans	0 8 1								
	chevre 10 ans	0 8 2								
Anin.	âne pre-adulte	0 8 3								
	âne adulte	0 8 4								
	anesse pre-adulte	0 8 5								
	anesse adulte	0 8 6								
Vol.	poulet ou coq	0 9 2								
	pintade	0 9 3								
	pigeon	0 9 4								
	canard	0 9 5								
	dindon	0 9 6								
Autre	porc pre-adulte	0 8 7								
	porc adulte	0 8 8								
	cheval	0 8 9								
	lapin	0 9 0								
	cobaye	0 9 1								

C.B.- Est-ce que le paysan donne des céréales à son bétail. Inscrire 'O' pour oui et 'N' pour non.

CHANGEMENTS EN COMPOSITION DU MENAGE

	Fev.	Mars	Avril	Mai	Juin	Juillet	Août	Sept	Oct.	Nov.	Dec.
01											
02											
03											
04											
05											
06											
07											
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20											

APPENDIX E

URBAN STUDIES
METHODOLOGY AND QUESTIONNAIRES

APPENDIX E

URBAN SURVEY METHODOLOGY
DESCRIPTION OF THE SAMPLES

To better understand both demand and the means by which urban consumers supply themselves with grain, we conducted separate studies in both Ouagadougou and Bobo-Dioulasso. In each city we selected samples of consumers and prepared food sellers, different questionnaires were administered to each group. They were designed to address the following issues:

a. Estimate urban demand (monthly/seasonal/annual);
b. Determine major buying patterns -- identify socioeconomic groups who exhibit different patterns;
c. Do commerçants change prices or delivery patterns to coincide with monthly demand patterns?
d. What portion of cereals are bought through the prepared food channel;
e. What is the restauranteurs' behavior vis-a-vis the cereals market;
f. Analysis of prices in different urban markets;
g. Who buys from OFNACER? Why or why not?;
h. Are consumers aware of the consumer prices for cereals?
i. Importance of own production and gifts in meeting urban consumption demand;
j. Relative importance of the different cereals in the urban diet -- vis-a-vis socioeconomic categories.

The sampling methodologies are explained below. Sample questionnaires follow.

Samples were chosen in both Bobo-Dioulasso and Ouagadougou for surveys of consumers and of prepared food sellers. These samples included:

- 108 households for the survey of consumers in Bobo-Dioulasso and 125 in Ouagadougou;
- 75 sellers of prepared foods in both Bobo-Dioulasso and Ouagadougou.

E.1 THE SAMPLE IN BOBO-DIOULASSO

E.1.1 Sample of Consumers

This sample is based on a population and household census conducted in 1978 by the ORD of Hauts-Bassins.[1] At that time there was a total of 14,339 households divided into 22 neighborhoods, of which 2 were new and not apportioned.[2] Since then the population in these two neighborhoods has grown significantly. Consequently we have augmented the original sample of 100 households, which is proportional to the census population, with 8 households from these two neighborhoods. Table E.1 shows the distribution of the sample of consumers.

The procedure for selecting the sample households was as follows. In the apportioned neighborhoods, the appropriate number of blocks was randomly selected, and then one household was randomly selected per block. In the nonapportioned neighborhoods, the interviewer chose households at random by selecting the second household every 500 meters.

E.1.2 Sample of Prepared Food Sellers and Restaurants

We took a representative sample of 75 sellers of prepared foods and restaurants from a population of 1089. This population was identified by a CRED interviewer who, during the months of April and May, conducted a census of these establishments (Table E.2). Included in this census are all sellers, whether they sell in front of their door, on a public road, in the small markets, in the central market or in a commercial zone. For each case where the sale took place and the type of prepared food sold was

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[1]It should be noted that the reason for using this census, given that it is somewhat dated, is the lack of more recent data. If it exists we were not able to obtain it -- not because of a lack of facilities but rather to the lack of time on the part of local government officials to provide us with the needed information when we wanted to construct our sample. Thus certain officials whom we spoke with, responded to the question about the availability of a recent census by saying, "To present you with this information would require at least a month of work at a time when I have a lot to do."

[2]Neighborhoods are classified as either apportioned (loti) or not apportioned (non-loti). By apportioned we mean they have been surveyed and subdivided into lots.

TABLE E.1

DISTRIBUTION OF THE SAMPLE OF CONSUMERS IN BOBO-DIOULASSO

BASE: 1978 CENSUS OF POPULATION AND HOUSEHOLDS OF THE CITY OF BOBO DIOULASSO BY THE ORD OF HAUTS-BASSINS

Neighborhood	Number of Households (%)	Number of Households Interviewed
Farakan	653 (4,45)	5
Bolmakoté	635 (4,36)	4
Koumima	260 (1,80)	2
Koko	1012 (6,96)	7
Kombougou	333 (2,29)	2
Hamdalaye	913 (6,28)	6
St. Etienne	478 (3,29)	3
Binoloingousso	180 (1,93)	2
Accart-ville	2989 (20,56)	21
Tounouma	401 (2,76)	3
Yorokoko	452 (3,11)	3
Donona	267 (1,83)	2
Sikasso-Sira	1116 ([illegible],68)	8
Ouezzin-ville	728 (5,07)	5
Koua	186 (1,27)	4[a]
Safalao	464 (3,19)	8[a]
Sossoudougou	767 (5,28)	5
Colma	901 (6,20)	6
Niénèta	323 (2,22)	2
Médina-coura	199 (1,37)	2
Diaradougou	913 (6,28)	6
Dioulassoba	271 (1,86)	2
Total	14 539 (100)	108

NOTE: [a]Additional households were chosen because of more than proportional increase in population since the census.

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TABLE E.2

CENSUS OF PREPARED FOOD SELLERS AND RESTAURANTS - BOBO-DIOULASSO

	Rice	Cakes (galettes)	Acassa (millet)	Bouillie	Donuts (Beignet)	Restaurants	Dolo (local beer)	Degué	Total	%
1	21	22	6	7	-	-	-	7	63	5.79
2	21	9	2	12	3	6	6	3	62	5.69
3	8	8	-	16	2	-	27	3	64	5.88
4	16	19	16	20	11	6	13	8	109	10.01
5	3	16	-	14	8	-	13	-	54	4.96
6	14	21	8	23	3	9	10	6	94	8.63
7	-	6	-	4	-	-	10	-	20	1.84
8	-	10	-	8	4	-	8	1	32	2.94
9	11	9	-	12	-	5	1	8	46	4.22
10	5	12	-	14	-	-	2	-	33	3.30
11	10	21	3	13	6	2	21	5	81	7.44
12	14	9	-	11	4	-	7	7	52	4.78
13	-	11	-	9	4	-	4	2	30	2.76
14	7	13	3	7	-	2	-	4	36	3.31
15	3	12	-	7	3	-	-	2	27	2.48
16	4	5	-	3	1	-	2	-	15	1.38
17	8	11	3	6	-	-	2	2	32	2.94
18	3	4	-	11	-	-	1	2	21	1.93
19	2	21	4	11	6	-	13	6	63	5.79
20	3	8	-	7	3	-	6	-	27	2.48
21	4	15	1	24	11	-	2	3	60	5.51
22	-	10	-	9	-	-	5	1	25	2.30
23	-	9	-	8	4	-	10	-	31	2.85
24	-	4	-	2	2	-	4	-	12	1.1
Total	157 (14.42)	285 (26.17)	46 (4.22)	258 (23.69)	75 (6.89)	30 (2.76)	168 (15.43)	70 (6.43)	1,089	100

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noted. It is this census which serves as the basis for the table showing the distribution of sellers by type of prepared food and by neighborhood.

In order to determine the number of sellers of each type of prepared food to be included in the sample, we calculated the proportion of each type found in the population and then multiplied this proportion by 75, the size of the sample (Table E.3).

Example:

$$\text{Rice} = \frac{157 \times 75}{1089} = 10.81 = 11$$

where 157 = number of rice sellers in population
1089 = size of population

We distributed the resulting number, in this case 11, among the neighborhoods proportional to their distribution in the population.

However, after the first interviews we became aware (in the case of certain types of prepared foods such as galettes (cakes), bouillie (porridge), and beignets (donuts), that the information did not vary very much. Thus we decided to reduce the number of interviews in these categories in order to increase the number of interviews in other categories, such as local restaurants and dolo brewers, taking into account the importance of the activity of the sellers in each category. Thus the 20 sellers of galettes obtained in the first sampling were reduced to 15. Similarly, the number of sellers of bouillie was reduced from 18 to 14, while the number of restaurants which produced food using local grains was increased from 2 to 8 and the number of sellers of dolo from 11 to 14.

The sample of sellers was randomly chosen according to the following procedure. If in a given market, there were 10 sellers in the market and 20 outside it, and it was necessary to interview 3 of them, we recommended that one interview be conducted in the market and 2 outside.

E.2 THE SAMPLE IN OUAGADOUGOU

E.2.1 Sample of Consumers

This sample corresponds exactly to that of CEDRES (Centre d'Etudes et de Documentation pour la Recherche en Economie Sociale de l'Université de Ouagadougou), a sample conducted in the context of the project IFPRI-CEDRES for a study of consumers in Ouagadougou.

TABLE E.3

DISTRIBUTION OF THE PREPARED FOOD SELLERS SAMPLE IN BOBO-DIOULASSO

	Rice	Cakes (galettes)	Acassa (millet)	Bouillie	Donuts (Beignet)	Restaurants	Dolo (local beer)	Degué	Total
1 Central Market	2	1	1	1	-	-	-	-	5
2 Farakan	1	1	-	1	-	1	1	-	5
3 Bolmakoté	1	1	-	-	-	-	2	-	4
4 Accart-ville	1	-	1	1	1	1	1	1	7
5 Sarfalao	-	1	-	1	1	-	1	-	4
6 Koko	1	1	1	2	-	1	1	-	7
7 Tounouma	-	-	-	-	-	-	2	-	2
8 Yorokoko	-	1	-	-	-	-	1	-	2
9 Diaradougou	1	-	-	1	-	1	-	1	4
10 Gonibougou	-	1	-	1	-	-	-	-	2
11 St. Etienne	1	1	-	1	1	-	1	-	5
12 Sikasso-Sira	1	-	-	-	-	1	-	1	3
13 Lafiabougou	-	1	-	1	-	-	-	-	2
14 Nyenta	1	1	-	-	-	-	-	-	2
15 Kolima	-	1	-	-	-	-	-	-	1
16 Souzoukoukin	-	-	-	-	-	-	-	-	-
17 Medmakina	1	-	-	-	-	-	-	-	1
18 Bindougousso	-	-	-	-	-	-	-	1	1
19 Ouezzin-ville	-	-	-	1	1	-	1	1	4
20 Kounima	-	1	-	-	-	-	1	-	2
21 Sousirebougou	-	1	-	1	1	2	-	-	5
22 Dioulassobâ	-	1	-	1	-	-	1	-	3
23 Dogoma	-	1	-	1	-	-	1	-	3
24 Hamdalaye	-	-	-	-	-	1	-	-	1
Total	11	15	3	14	5	8	14	5	75

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

The IFPRI-CEDRES sample is based on a map of Ouagadougou containing the apportioned neighborhoods from which they were able to identify 1076 plots.[3] From these plots they selected a random sample of 105. From each of these plots the household located in the furthest northwest corner was selected. In order to augment the 105 households from the apportioned neighborhoods, they randomly chose 5 households in each of the 4 coordinates (north-south-east-west) of the city. Thus they added 20 households to the sample.[4] Table E.4 shows the distribution of the sample of consumers.

E.2.2 Sample of Sellers of Prepared Food and Restaurants

This sample is based on a census conducted in April and May 1984 by a CRED interviewer in the neighborhoods of Ouagadougou, including the nonapportioned neighborhoods. The census identified 1376 sellers of all types of prepared food including rice, *bouillie*, *galettes*, *boules d'akassa*, and *dolo*, and restaurants which produced food using local grains (Table E.5). We chose a sample of 75 from this population of 1376, with the proportion of sellers of each type of prepared food in the sample corresponding to that in the population (Table E.6). For example:

$\frac{364 \times 75}{1376}$ = 20 sellers of rice — where 364 = number of sellers of rice in the population

$\frac{415 \times 75}{1376}$ = 22.62 = 23 sellers of *dolo* — 415 = number of sellers of *dolo* in population

We then distributed the total number of sellers of each type of prepared food among the different neighborhoods proportional to their distribution in the population.

$\frac{49 \times 23}{415}$ = 2.72 = 3 sellers of *dolo* in this neighborhood in sample — where 49 = total number of sellers in selected neighborhood (population); 415 = total number of sellers of *dolo* in population

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[3]See Footnote 2. A plot is a subdivision of an apportioned neighborhood.

[4]IFPRI-CEDRES had a refusal rate between 10% and 15%. They replaced these households with their neighbors to the left.

TABLE E.4

COMPARISON OF OUR SAMPLE (IFPRI-CEDRES) WITH THE POPULATION OF NEIGHBORHOODS IN THE APPORTIONED ZONE OF OUAGADOUGOU

Neighborhood	% of Lots in the Apportioned Zone Total = 1076	Number of Households	% of Lots in Sample Total = 105
Kamsoghin	7	6	5,7
Mission	2,3	4	3,8
Tiendpalogo	6,8	3	2,9
Koulouba, Zone Residentiel	5,9	3	2,9
Bilbalogo, Samandin	13,3	16	15,2
Gonghuin Nord	13,8	15	14,3
Gonghuin Sud	5	9	4,8
Ouidi Larlé, Kologha Naba	12,6	16	15,2
Bilibambili	6,6	6	5,7
Paspanga	3,7	5	4,8
Dapoya	8,1	5	4,8
Zone du bois	2,1	2	1,2
Zogona I	8	4	3,8
Zogona II	4,8	6	5,7
Total	100	125	100

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE E.5

CENSUS OF PREPARED FOOD SELLERS AND RESTAURANTS IN OUAGADOUGOU

	Rice	Cakes (galettes)	Acassa (millet)	Bouillie	Restaurants	Dolo (local beer)	Total
1 Sankariare	13	4	3	3	-	-	23
2 Gounghin	6	3	6	5	-	49	69
3 Dassasgho	12	7	-	10	-	45	74
4 Central Market	9	7	11	13	3	-	43
5 Larlé	16	7	9	14	1	13	60
6 Pagabayiri	11	11	3	17	-	18	60
7 Baskuy	18	4	2	13	-	-	37
8 Dagnoé	16	7	2	13	-	13	51
9 Winitinga	13	5	-	7	2	23	50
10 Palemitinga	9	3	-	4	2	13	31
11 Ouidi	10	9	-	15	-	13	47
12 Zogona	9	10	2	10	-	-	31
13 Kamsonghin	13	4	-	3	-	11	31
14 Cissin	13	7	3	10	-	15	48
15 Koulouba	12	5	1	3	1	18	40
16 Wayalgui	7	6	2	6	-	10	31
17 Dapoya II	6	5	-	6	1	11	29
18 St. Léon	5	1	-	5	-	21	32
19 Zabré Daga	6	5	5	3	2	-	21
20 Sanyiri	8	9	-	10	-	8	35
21 Carré-four Pô	-	-	-	-	-	-	-
22 Kalgodin	9	7	-	5	-	5	26
23 Sambin	9	5	-	12	-	9	35
24 Tiedpologho	15	2	2	4	-	7	30
25 Zangoetin	7	2	1	5	-	-	15
26 Mozintinga	3	-	-	5	-	4	12
27 Tampouy	16	10	2	6	-	29	63
28 Song Naba	7	7	1	11	-	7	33
29 Nemnin	5	5	5	1	-	5	21
30 Pissi	9	4	-	8	-	2	23
31 St. Camille	5	4	-	5	-	7	21
32 Pagrazondé	5	6	-	8	-	7	26
33 Bangré	5	3	-	6	-	2	16
34 Watinoma	3	4	-	7	-	-	14
35 Tinnoghin	6	-	4	3	-	3	16
36 Antenne-ville	5	3	-	5	-	-	13
37 Kossodo	-	-	-	-	-	-	-
38 Gare-Routier	9	1	-	6	-	-	16
39 Napamboumbou	8	3	1	6	-	6	24
40 Zambasgo	3	2	-	8	-	3	17
41 Somegandé	-	-	-	-	-	-	-
42 Silmissi	2	2	-	2	-	-	6
43 Pate-d'oie	2	2	-	4	-	-	8
44 Gnoko II	-	-	-	-	-	-	-
45 St. Samuel	3	2	-	3	-	-	8
46 Toyibin	4	1	-	1	-	4	10
47 Bilbalogo	4	1	-	6	-	17	28
48 Nionksin	4	5	1	4	-	3	17
49 Tanguin	9	6	-	6	-	14	35
Total	369	207	66	307	12	415	1,376

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE E.6

SAMPLE OF PREPARED FOOD SELLERS AND RESTAURANTS IN OUAGADOUGOU

	Rice	Cakes (galettes)	Acassa (millet)	Bouillie	Restaurants	Dolo (local beer)	Total
1 Sankariare	1	-	-	-	-	-	1
2 Gounghin	-	-	1	-	-	3	4
3 Dassasgho	1	1	-	1	-	3	6
4 Central Market	1	-	1	1	1	-	4
5 Larlé	1	1	1	1	1	1	6
6 Pagabayiri	1	1	-	1	-	1	4
7 Baskuy	1	-	-	1	-	1	3
8 Dagnoé	1	1	-	1	-	1	4
9 Winitinga	1	-	-	1	-	1	3
10 Palemitinga	1	-	-	1	-	1	3
11 Ouidi	1	1	-	1	-	1	4
12 Zogona	1	1	-	1	-	-	3
13 Kamsonghin	1	-	-	-	-	1	2
14 Cissin	1	1	-	1	-	1	4
15 Koulouba	1	-	-	-	-	1	2
16 Wayalgui	-	-	-	-	-	1	1
17 Dapoya II	-	-	-	-	-	1	1
18 St. Léon	-	-	-	-	-	1	1
19 Zabré Daga	-	-	-	-	-	-	-
20 Sanyiri	-	1	-	1	-	-	2
21 Carré-four Pô	-	-	-	-	-	-	-
22 Kalgodin	1	1	-	-	-	-	2
23 Sambin	1	-	-	1	-	1	3
24 Tiedpologho	1	-	-	-	-	-	1
25 Zangoetin	-	-	-	-	-	-	-
26 Mozintinga	-	-	-	-	-	-	-
27 Tampouy	1	1	-	-	-	2	4
28 Song Naba	-	1	-	1	-	-	2
29 Nemnin	-	-	-	1	-	-	1
30 Pissi	1	-	-	-	-	-	1
31 St. Camille	-	-	-	-	-	-	-
32 Pagrazondé	-		-	1	-	-	1
33 Bangré	-	-	-	-	-	-	-
34 Watinoma	-	-	-	1	-	-	1
35 Tinnoghin	-	-	-	-	-	-	-
36 Antenne-ville	-	-	-	-	-	-	-
37 Kossodo	-	-	-	-	-	-	-
38 Gare-Routier	1	-	-	-	-	-	1
39 Napamboumbou	-	-	-	-	-	-	-
40 Zambasgo	-	-	-	1	-	-	1
41 Somegandé	-	-	-	-	-	-	-
42 Silmissi	-	-	-	-	-	-	-
43 Pate-d'oie	-	-	-	-	-	-	-
44 Gnoko II	-	-	-	-	-	-	-
45 St. Samuel	-	-	-	-	-	-	-
46 Toyibin	-	-	-	-	-	-	-
47 Bilbalogo	-	-	-	-	-	1	1
48 Nionksin	-	-	-	-	-	-	-
49 Tanguin	-	-	-	-	-	1	1
Total	20	11	3	18	2	24	78

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

The selection of sellers in each neighborhood was done at the discretion of the interviewer, who was instructed to avoid choosing two neighboring sellers.

In conclusion we note that the development and execution of this survey was not easy. There were cases where after having begun an interview we were obliged to find a replacement because the original interviewee had dropped out. We suspect that in most of these cases, and especially for the sellers of prepared foods, the interviewee had the impression that we were connected with the tax authorities and that they might be subsequently harassed.

APPENDIX E, continued

URBAN STUDIES QUESTIONNAIRES

ENQUETE CONSOMMATEUR

Random no. _____
Interview Reviewed _____
Lieu d'entretien _____
Répondeur _____
Enquêter _____
Les autres qui assistaient
à l'entretien _____

_____ _____ _____
Quartier ville date
Ethnie:

I. Le renseignements démographiques (concernant tous les gens nourris sur le même budget)
L'occupation du chef de famille _____ Catégorie _____

Autres personnes apportant un revenu (nombre) _____ Nom de travail _____

Nombre de personnes nourries sur place, en famille _____

	TABLEAU I.							
	AGE							
SEX	1	1-5	5-15	15-30	30-45	45-60	60	Sans Réponse
	Nombre d'épouses:							

II. LA CONSOMMATION DE CEREALES

SAISON PERIODE		FREQUENCE DE CONSOMMATION DES PRODUITS/SEMAINE				QUANTITE CONSOMMEE	EQUIVALENT kg/mois(2)
		Petit Déjeuner	Déjeuner	Diner	Autre		
C: Juillet Août Sept Oct	Sorgho B. Petit Mil Riz Mais						
	Nbre Pers nourries						
CHANGEMENTS A: Nov Déc Jan Fév							
	Nbre Pers nourries						
CHANGEMENTS B: Mars Avril Mai Juin							
	Nbre Pers nourries						

- Quelles céréales préferez-vous? _____ Pourquoi?
- Quelles céréales consommez-vouz le plus? 1. _____ 2. _____ 3. _____. Pourquoi?

III. LES ACHATS DE CEREALES

PRODUITS (Céréales) Periode C	Quantité mesure nombre	Frequence Combien de fois par semaine/mois	Vendeur (code)	Lieu (code)	Cash credit	Prix pour une unité de mesure	Epoque, jour, heure d'achat
Changement Période A							
Changement Période B							
Année Précédente							

CODES POUR LES PERIODES: C) = Juillet, Août, Sept., Oct.; (A) = Nov., Déc., jan., Fév., Mars; (B) = Mars, Avril, Mai, Juin.

1) Code pour "Vendeur"

V1: Producteur
V2: Vendeuse

V3: Petit/Moyen Commerçant
V4: Grand Commerçant
V5: SOVOLCOM
V6: OFNACER
V7: Autres (ex: mentionner "service" lequel? ex: camp militaire

2) Code pour "Lieu"

R: Marchés Ruraux
1: Marchés locaux (de quartier)
C: Marché Central
A: Autres Marchés

Si hors Marché, ajoutez H devant L, C, ou A.

Noms de Marché ou quartier ou village

_____
_____
_____
_____

Code pour Produits:

Sorgho Blanc=002 Sorgho rouge=003 Petit Mil=004 Mais=006 Riz=008

IV. LA PRODUCTION

Produisez-vous vos propres céréales? _____

CEREALES	mesure	nombre total	QUANTITE consommation	Don	Vente

1. Quand consommez-vous votre production?
   Pendant combien de temps celà peut vous supporter? _____
2. Consommez-vous d'abord avant d'acheter? _____ Pourquoi?
   _____
   _____

3. Recevez-vous des céréales en cadeau? _____ Combien et d'où? _____
   Quand achetez-vous les céréales? _____

IV A) PRISE DE DECISION - RAISONS ET CRITERES DE COMPORTEMENT DE CONSOMMATION ET D'ACHAT			
	QUI DECIDE?	CRITERES ET RAISONS DE CETTE DECISION.	CRITERES DE COMPORTEMENT
Catégorie de céréales utilisées régulièrement (en période C)			
Forme (grain/farine) des achats, époque fréquence d'achat, mesure utilisée			
Vendeur lieu			
Crédit			
Changement Consommation/ achats pendant période A et B par rapport à C			
Changement des années Antérieures			

RELATIONS PERSONNELLES							
APPRECIATION							
QUALITE DES CEREALES Que savez-vous? Comment le savez-vous?							
APPRECIATION							
MESURES Les connaissez-vous? Quel contenu réel? Comment le savez-vous?							
APPRECIATION							
RAPPORT PRIX/ MESURE (valeur comparée du prix au kilo) Que savez-vous? Comment?							
APPRECIATION							
SUGGESTIONS Comment Améliorer?							

*Le tableau a pour but de connaitre le niveau d'information dont dispose l'acheteur sur les différents types de fournisseurs de céréales sur leurs "points faibles," et l'opinion qu'il s'est forgée sur chacun d'eux.

V. COMMERCE - CADEAU

Des membres du ménage font-ils du commerce? _____ des cadeaux de céréales? _____

Nature du commerce ou produits commercialisés	Sources des produits	Lieu de vente	Quantité vendue par mois année
Nature cadeau _____ _____			

VI. LE REVENU

Combien de membres contribuent au revenu de la famille (Y compris le chef de famille)? _____ lesquels?

1. _____ catégorie _____
2. _____ catégorie _____
3. _____ catégorie _____
4. _____ catégorie _____
5. _____ catégorie _____
6. _____ catégorie _____
7. _____ catégorie _____

Quel peut-être le revenu global approximatif de la famille? _____
Quelle part utilisez-vous pour la famille? _____ _____

NB: Mentionner l'existence dans le ménage, d'un ancien combattant, au cas ou il y en aurait.

ENQUETE DE VENDEUSE DE PLAT CUISINE ET RESTAURANT

Quartier _____ Ville _____ date _____

Nom de la vendeuse ou du propriétaire

Ethnie _____ age _____ sexe _____

Interview reviewed _____

Lieu d'entretien _____

Enquêté _____

Les autres qui assistaient à l'entretien _____

I. BUDGET POUR UNE PREPARATION

Nom du Plat PERIODE C	Frequence par jour/semaine	Céréales Utilisées par preparation nature quantité CFA	Ingredients nature CFA	le Bois (CFA)	Salaires des employés	Unité de vente	Prix de vente	Revenu Total pour une preparation	Nbre de plats servis par preparation
Changements en Periode A									
Changements en Periode B									
Durant les années précédents									

II. LES ACHATS DE CEREALES

PRODUITS (Céréales) Periode C	Quantité mesure nombre	Frequence Combien de fois par semaine/mois	Vendeur (code)	Lieu (code)	Cash credit	Prix pour une unité de mesure	Epoque, jour, heure d'achat
Changement Période A							
Changement Période B							
Année Précédente							

CODES POUR LES PERIODES: C) = Juillet, Août, Sept., Oct.; (A) = Nov., Déc., jan., Fév., Mars; (B) = Mars, Avril, Mai, Juin.

1) Code pour "Vendeur"

V1: Producteur
V2: Vendeuse

V3: Petit/Moyen Commerçant
V4: Grand Commerçant
V5: SOVOLCOM
V6: OFNACER
V7: Autres (ex: mentionner "service" lequel? ex: camp militaire

2) Code pour "Lieu"

R: Marchés Ruraux
l: Marchés locaux (de quartier)
C: Marché Central
A: Autres Marchés

Si hors Marché, ajoutez H devant L, C, ou A.

Noms de Marché ou quartier ou village

_____
_____
_____
_____

III. LES VENTES

1. Quand le prix des céréales utilisées augmente, que faites-vous pour préserver vos bénéfices? _____

- Achetez-vous moins d'ingrédient? _____
- Diminuez-vous l'unité de vente (en maintenant les prix)? _____

_____

- Augmentez-vous le prix d'unité? _____
- Autres comportements? _____

_____

2. Faites-vous crédit à certains de vos clients? _____ A combien d'entre eux? _____? Ce système de crédit a-t-il été proposé par vous? _____ Pourquoui? _____ Caractéristiques des clients:

1. situation de famille _____ profession _____ logement _____
   Pass/Regulier _____ autres _____
2. situation de famille _____ profession _____ logement _____
   Pass/Regulier _____ autres _____

NB: 1. enquêtes = vendeuse - restaurant
2. enquêtes = consommateurs (vérification)

IV A) PRISE DE DECISION - RAISONS ET CRITERES DE COMPORTEMENT DE CONSOMMATION ET D'ACHAT			
	QUI DECIDE?	CRITERES ET RAISONS DE CETTE DECISION.	CRITERES DE COMPORTEMENT
Catégorie de céréales utilisées régulièrement (en période C)			
Forme (grain/farine) des achats, époque fréquence d'achat, mesure utilisée			
Vendeur lieu			
Crédit			
Changement Consommation/ achats pendant période A et B par rapport à C			
Changement des années Antérieures			

IV. B INFORMATIONS - SOURCE D'INFORMATION - APPRECIATIONS, JUGEMENTS SUR LES FOURNISSEURS DE CEREALES*

LEGENDE

INFORMATION: réponses données ou bien "ne sais pas"
SOURCE D'INFORMATION: Explication précise de la source d'information
APPRECIATION
(1) Trés favorable (2) assez favorable (3) Sans importance
(4) Défavorable (-) Aucune idée

(ex: Le critère de la qualité des céréales est-il à votre avis un critère favorable ou non pour chacun des différents types d'intermédiaires_____

FOURNISSEURS / CRITERES CHOIX	PRODUCTEUR	VENDEUSE	PETIT/MOYEN COMMERCANT	GRAND COMMERCANT	SOVOLCOM	OFNACER	AUTRES services fonctionnaires
DISPONSIBILITE DES CEREALES que savez-vous? Comment le savez-vous?							
APPRECIATION							
PROXIMITE TRANSPORT							
APPRECIATION							

RELATIONS PERSONNELLES							
APPRECIATION							
QUALITE DES CEREALES Que savez-vous? Comment le savez-vous?							
APPRECIATION							
MESURES Les connaissez-vous? Quel contenu réel? Comment le savez-vous?							
APPRECIATION							
RAPPORT PRIX/ MESURE (valeur comparée du prix au kilo) Que savez-vous? Comment?							
APPRECIATION							
SUGGESTIONS Comment Améliorer?							

*Le tableau a pour but de connaitre le niveau d'information dont dispose l'acheteur sur les différents types de fournisseurs de céréales sur leurs "points faibles," et l'opinion qu'il s'est forgée sur chacun d'eux.

APPENDIX F

URBAN STUDIES RESULTS

TABLE F.1a

CHOICE OF SELLER BY URBAN CONSUMER FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice
Producers (1)	2 (2.1)	-	1 (1.5)	-
Vendeuses (2)	8 (8.3)	2 (7.1)	9 (13.4)	6 (5.0)
Small or medium trader (3)	21 (21.9)	10 (35.7)	18 (26.9)	29 (24.4)
Large trader (4)	12 (12.5)	7 (25.0)	2 (3.0)	12 (10.1)
FASO YAAR (5)	-	-	-	4 (3.4)
OFNACER (6)	20 (20.8)	2 (7.1)	20 (29.9)	26 (21.8)
Producer or small/medium trader (13)	1 (1.0)	-	-	-
Bought from OFNACER through the employer (17)	-	1 (3.6)	-	-
Vendeuses or small/medium trader (23)	5 (5.2)	2 (7.1)	-	6 (5.2)
Small/medium trader or large trader (34)	5 (5.2)	-	5 (7.5)	7 (5.9)
Trader or OFNACER (36)	11 (11.4)	3 (10.7)	4 (6.0)	14 (11.7)
FASO YAAR or OFNACER (56)	-	-	-	1 (0.8)
OFNACER or vendeuses (62)	-	-	-	1 (0.8)
Large trader or military camp (67)	1 (1.0)	-	-	1 (0.8)
Other (7)	9 (9.4)	1 (3.6)	8 (11.9)	12 (10.1)

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TABLE F.1b

CHOICE OF SELLER BY URBAN CONSUMER FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice
Producers (1)	5 (6.0)	1 (2.9)	3 (13.6)	1 (1.0)
Vendeuses (2)	5 (6.0)	2 (5.7)	1 (4.5)	-
Small or medium trader (3)	38 (45.8)	2 (57.1)	6 (27.3)	72 (69.9)
Large trader (4)	-	-	3 (13.6)	-
OFNACER (6)	3 (3.6)	2 (5.7)	1 (4.5)	4 (3.9)
Vendeuses or small/medium trader (23)	1 (1.2)	-	-	-
Producer or purchased through employer (33)	1 (1.2)	-	-	-
Small/medium trader or large trader (34)	22 (26.5)	7 (20.0)	6 (27.3)	3 (2.9)
Trader or FASO YAAR (35)	-	-	-	1 (1.0)
Trader or OFNACER (36)	3 (3.6)	3 (8.6)	1 (4.5)	5 (4.9)
Other (7)	1 (1.2)	-	1 (4.5)	14 (13.6)
No response/no particular seller (8)	4 (4.8)	-	-	3 (2.9)

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TABLE F.2a

SIZE OF TRANSACTION BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice
Kilo (3)	-	-	-	24 (20.2)
Tomato can (11)	-	1 (3.6)	-	-
Local plate (14)	5 (5.2)	-	7 (10.6)	1 (0.8)
Yoruba plate (15)	9 (9.4)	6 (21.4)	4 (6.1)	-
ORD tine (17)	9 (9.4)	7 (25.0)	7 (10.6)	4 (3.4)
50 kilogram sack (30)	7 (7.3)	1 (3.6)	13 (19.7)	54 (45.4)
100 kilogram sack (31)	65 (67.7)	13 (46.4)	34 (51.5)	31 (26.1)
60 kilogram sack (53)	1 (1.0)	-	1 (1.5)	4 (3.4)
90 kilogram sack (54)	-	-	-	1 (0.8)

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TABLE F.2b

SIZE OF TRANSACTION BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice
Kilo (3)	3 (3.6)	-	1 (4.5)	20 (19.4)
Tomato can (11)	2 (2.4)	2 (5.7)	-	-
ORD tine (17)	13 (15.7)	19 (54.3)	3 (13.6)	2 (1.9)
50 kilogram sack (30)	2 (2.4)	2 (5.7)	4 (18.20	42 (40.8)
100 kilogram sack (31)	63 (75.9)	11 (31.4)	13 (59.1)	37 (35.9)
Double Pot (52)	-	1 (2.9)	1 (4.5)	-
90 kilogram sack (54)	-	-	-	2 (1.9)

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE F.3a

FREQUENCY OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Frequency of Purchase	White Sorghum	Millet	Corn	Rice
Daily (1)	5 (5.3)	2 (7.1)	6 (9.1)	19 (16.0)
Once every 2 weeks (2)	4 (4.2)	3 (10.7)	2 (3.0)	5 (4.2)
Once every 3 weeks (3)	6 (6.3)	1 (3.6)	4 (6.1)	6 (5.0)
Once a month (4)	39 (41.1)	5 (17.9)	29 (43.9)	57 (47.9)
Once every 1-2 months (5)	13 (13.8)	4 (14.3)	7 (10.5)	15 (12.7)
Once every 2 months (6)	8 (8.4)	2 (7.1)	6 (9.1)	6 (5.0)
Once every 3 months (7)	1 (1.1)	-	3 (4.5)	3 (2.5)
Once every 4 months (8)	1 (1.1)	1 (3.6)	1 (1.5)	-
Once every 2-3 months (9)	3 (3.2)	-	-	-
Once a year (15)	1 (1.1)	2 (7.1)	-	-
Once a week (17)	11 (11.6)	4 (14.3)	2 (3.0)	1 (0.8)
2-4 times a week (18)	2 (2.1)	3 (10.7)	4 (6.0)	4 (3.3)
Variable (23)	-	-	1 (1.5)	-
Once every 5-7 months (25)	1 (1.1)	-	1 (1.5)	1 (0.8)
Twice a month (26)	-	1 (3.6)	-	1 (0.8)
1-2 times per month (27)	-	-	-	1 (0.8)

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TABLE F.3b

FREQUENCY OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Frequency of Purchase	White Sorghum	Millet	Corn	Rice
Daily (1)	5 (6.0)	1 (2.9)	2 (9.1)	10 (9.7)
Once every 3 weeks (3)	1 (1.2)	-	-	2 (1.9)
Once a month (4)	58 (69.9)	22 (62.9)	12 (54.5)	67 (65.0)
Once every 1 & 1/2 months (5)	1 (1.2)	-	1 (4.5)	3 (2.9)
Once every 2 months (6)	10 (12.0)	1 (2.9)	1 (4.5)	9 (8.7)
Once every 3 months (7)	5 (6.0)	2 (5.7)	2 (9.1)	5 (4.9)
Once every 4 months (8)	1 (1.0)	1 (2.9)	-	4 (3.9)
Once every 2-3 months (9)	1 (1.0)	-	-	-
Once every 5 months (10)	-	2 (5.7)	1 (4.5)	-
Once every 10 months (14)	-	-	1 (4.5)	-
Once a year (15)	1 (1.2)	6 (17.1)	2 (9.1)	3 (2.9)

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TABLE F.4a

LOCATION OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice
Rural market (1)	1 (1.0)	1 (3.6)	1 (1.5)	-
Local market (quarter) (2)	36 (37.5)	13 (46.4)	21 (31.8)	44 (37.0)
Central market (3)	20 (20.8)	9 (32.1)	9 (13.6)	23 (19.3)
Other markets or purchased through employer (4)	8 (8.3)	-	9 (13.6)	11 (9.2)
OFNACER or central market (5)	1 (1.0)	1 (3.6)	-	1 (0.8)
Local market or central market (12)	4 (4.2)	-	4 (6.1)	5 (4.2)
Rural market or central market (13)	1 (1.0)	-	-	-
OFNACER or local market (25)	2 (2.1)	-	1 (1.5)	3 (2.5)
OFNACER (central) or FASO YAAR (140)	16 (16.7)	3 (10.7)	19 (28.8)	24 (20.3)
OFNACER (quarter or local) (141)	6 (5.2)	1 (3.6)	2 (3.0)	7 (6.8)
No response (6)	1 (1.0)	-	-	1 (0.8)

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TABLE F.4b

LOCATION OF PURCHASES BY URBAN CONSUMERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice
Rural market (1)	5 (6.0)	1 (2.9)	3 (13.6)	1 (1.0)
Local market (quarter) (2)	12 (14.5)	5 (14.3)	3 (13.6)	17 (16.5)
Central market (3)	51 (61.3)	24 (68.6)	13 (59.1)	58 (56.3)
Other markets or purchased through employer (4)	-	-	-	16 (15.5)
OFNACER or central market (5)	3 (3.6)	3 (8.6)	1 (4.5)	5 (4.9)
Local market or central market (12)	1 (1.2)	-	-	1 (1.0)
Outside of the market (22)	1 (1.2)	-	-	-
Bought from OFNACER through the employer (87)	1 (1.2)	-	-	-
OFNACER (central) or FASO YAAR (140)	3 (3.6)	2 (5.7)	1 (4.5)	2 (1.9)
Other[a] (7)	2 (2.4)	-	-	-
No response (6)	4 (4.8)	-	1 (4.5)	3 (2.9)

NOTE: a) Military camp, employer, etc.

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TABLE F.5a

CHOICE OF SELLER BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice	Red Sorghum
Vendeuse (2)	-	1 (3.8)	-	2 (9.1)	1 (25.0)
Small/Medium-sized Trader (3)	- -	4 (15.4)	2 (50.0)	10 (45.5)	-
Large Trader (4)	-	-	-	1 (4.5)	1 (25.0)
Producer or Small/Medium-sized Trader (13)	-	-	-	-	1 (25.0)
Vendeuse or Small/Medium-sized Trader (23)	-	20 (76.9)	2 (50.0)	4 (18.2)	-
Small/Medium or Large Trader (34)	-	9 (3.8)	-	2 (9.1)	1 (25.0)
Small/Medium Trader or OFNACER (36)	-	-	-	2 (9.1)	-
Large Trader or OFNACER (46)	-	-	-	1 (4.5)	-

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TABLE F.5b

CHOICE OF SELLER BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Seller	White Sorghum	Millet	Corn	Rice	Red Sorghum
Producer (1)	-	-	-	-	1 (33.3)
Vendeuse (2)	-	7 (22.6)	1 (100.0)	1 (3.6)	1 (33.3)
Small/Medium-sized Trader (3)	- -	21 (67.7)	-	22 (78.6)	1 (33.3)
Large Trader (4)	-	-	-	2 (7.1)	-
FASO YAAR (5)	-	-	-	1 (3.6)	-
Vendeuse or Small/Medium-sized Trader (23)	1 (100.0)	2 (6.5)	-	1 (3.6)	-
Small/Medium or Large Trader (34)	-	-	-	1 (3.6)	-
No Particular Seller (14)	-	1 (3.2)	-	-	-

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TABLE F.6a

SIZE OF TRANSACTION BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice	Red Sorghum
Kilogram (3)	-	-	-	7 (31.8)	-
Yoruba plate (15)	-	21 (80.8)	4 (100.0)	8 (36.4)	-
ORD tine (17)	-	4 (15.4)	-	2 (9.1)	1 (25.0)
50 kilogram sack (30)	-	-	-	4 (18.2)	-
100 kilogram sack (31)	-	1 (3.8)	-	1 (4.5)	3 (75.0)

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TABLE F.6b

SIZE OF TRANSACTION BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Measure	White Sorghum	Millet	Corn	Rice	Red Sorghum
Kilogram (3)	-	-	-	22 (78.6)	-
Small ladle (7)	-	2 (6.5)	-	-	-
Tomato can (11)	1 (100.0)	16 (51.6)	-	-	-
Local plate (14)	-	-	1 (100.0)	-	-
ORD tine (17)	-	11 (35.5)	-	2 (7.1)	-
Medium basket (19)	-	-	-	-	1 (33.3)
50 kilogram sack (30)	-	-	-	2 (7.1)	-
100 kilogram sack (31)	-	2 (6.5)	-	2 (7.1)	1 (33.3)
Basin (61)					1 (33.3)

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TABLE F.7a

FREQUENCY OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Frequency	White Sorghum	Millet	Corn	Rice	Red Sorghum
Once a week (6)	-	-	-	1 (4.5)	-
Twice a week (7)	-	1 (3.8)	-	2 (9.1)	4 (100.0)
Four times a week (9)	-	1 (3.8)	-	-	-
Five times a week (10)	-	1 (3.8)	1 (25.0)	-	-
Seven times a week (12)	-	23 (88.5)	3 (75.0)	19 (86.4)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE F.7b

FREQUENCY OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Frequency	White Sorghum	Millet	Corn	Rice	Red Sorghum
Once a week (6)	-	3 (9.7)	-	2 (7.1)	1 (33.3)
Twice a week (7)	-	3 (9.7)	-	3 (10.7)	1 (33.3)
Three times a week (8)	-	4 (12.9)	-	1 (3.6)	-
Four times a week (9)	-	1 (3.2)	-	5 (17.9)	1 (33.3)
Five times a week (10)	-	3 (9.7)	-	1 (3.6)	-
Six times a week (11)	-	3 (9.7)	-	2 (7.1)	-
Seven times a week (12)	1 (100.0)	13 (41.9)	1 (100.0)	12 (42.9)	-
Once a month (13)	-	1 (3.2)	-	1 (3.6)	-
Once every 2 months (14)	-	-	-	1 (3.6)	-

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE F.8a

LOCATION OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Ouagadougou Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice	Red Sorghum
Local markets (quarter) (2)	-	22 (84.6)	4 (100.0)	15 (68.2)	-
Central markets (3)	-	1 (3.8)	-	5 (22.7)	1 (25.0)
Delivered to the compound (5)	-	2 (7.7)	-	-	3 (75.0)
Rural or central markets (13)	-	1 (3.8)	-	-	-
Local or central markets (23)	-	-	-	2 (9.1)	-

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TABLE F.8b

LOCATION OF PURCHASES BY PREPARED FOOD SELLERS FOR DIFFERENT GRAINS
(Bobo-Dioulasso Sample)

(% of column total in parentheses)

Location	White Sorghum	Millet	Corn	Rice	Red Sorghum
Local markets (quarter) (2)	1 (100.0)	5 (16.1)	-	18 (64.3)	1 (33.3)
Central markets (3)	-	16 (51.6)	1 (100.0)	7 (25.0)	1 (33.3)
Delivered to the compound (5)	-	-	-	-	1 (33.3)
Local or central markets (23)	-	10 (32.3)	-	3 (10.7)	-

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APPENDIX G

GRAIN PRICES

APPENDIX G

GRAIN PRICES

The prices discussed and analyzed in this report were compiled from a variety of sources. This appendix discusses and presents these grain prices. For each source the method of price collection and computation is explained. The problems presented by using these prices for analysis are discussed briefly.

G.1 GRAIN PRICES

Grain prices are collected by several organizations within Burkina Faso, including OFNACER, ORDs, the Ministry of Commerce,[1] and individual projects. The frequency and method of collection is different for each source.

The prices used in this report, and listed in this appendix come from these different sources. The method and frequency of collection by OFNACER, ORDs, and our study are descibed below. Table G.1 summarizes the sources and extent of the series of prices for different markets. The prices themselves appear in Tables G.2 - G.5.

The price series we were able to find are relatively short, no more than 2-3 years. Some ORDs, however, have been collecting prices since the 1960s. Some of these prices have been published in other reports (eg. CRED, 1977). Many of the prices sit, or sat in notebooks stacked up in ORD offices, available to be transcribed by any interested parties, however, after a period of time they are often thrown out, never having been used. For example, when we inquired about prices at the ORD du Centre, they told us that they had just thrown out a room full of notebooks because they needed space, and didn't know what to do with them. At present, to our knowledge, neither the ORDs nor the government analyzes or publishes these prices.

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[1]The Ministry of Commerce collects prices for grain in Ouagadougou, once a month. However, since 1981 they only have the official price; we did not use these prices.

G.1.1 OFNACER

OFNACER agents in the different buying and selling centers are instructed to collect the prices for millet, white sorghum and maize in several markets near the collection center during the last week of the month. For each grain the average of these prices is to be submitted as its monthly price for that region.

OFNACER is interested in the price of a sack of grain. When sacks are not being sold in a particular market, the price of a tine is multiplied by six in order to arrive at a price per sack.

The purpose of collecting these prices is to be able judge when grain is running short in a particular region, so that OFNACER can estimate when and where it should be sending supplies. Obviously these prices can only be used for inter-regional and inter-seasonal comparisons.

G.1.2 ORDs

Each ORD has a division of economic studies, which is supposed to collect and analyze prices within that ORD. Some ORDs collect prices and others do not. In the ORDs where prices are collected, the extension agent in each sub-sector collects prices in a selected set of markets once every ten days (les mercuriales). For each market the average of these three prices is submitted as the monthly price. Prices are usually collected for the tine, and perhaps the sack.

Presumably these prices are collected for statistical purposes. They can be used for inter- and intra-regional comparisons. The inter-seasonal price fluctuations are dampened by the averaging.

G.1.3 The CRED Study

Prices were collected in all three components of this study, urban, village, and rapid reconnaissance teams. The purposes were twofold: 1) to obtain a few consistent series, at minimal cost, which could be used in the analysis, and which we knew were not being collected elsewhere; and 2) to have some comparative information for evaluating prices collected by other sources.

Urban consumer prices were collected in six markets in Ouagadougou and five markets in Bobo-Dioulasso. Sack and tine prices were collected weekly for millet, white and red sorhgum, and maize. Periodically we

would purchase grain for the purpose of evaluating the weight of different measures.

Rural consumer and producer prices were collected by the village study teams for selected markets frequented by the sample members. Weekly prices for the major two or three cereals traded in the region were obtained for local units and sacks when possible.

In order to study marketing margins, the village study teams also enlisted farmers to buy and sell grain with traders. The weight and price of each purchase and sale were recorded and used to calculate local traders' margins.

The rapid reconnaissance team members also collected prices in the markets which they studied. Sometimes grain was weighed. These prices, because of their irregularity, are useful for verifying prices in other series, but do not themselves represent any kind of a consistent series.

G.1.4 Other Projects

Several other projects collected grain prices: Hans Bliler's group at OFNACER, the Nioné-Djionkélé Rice Development Project near N'Dorola, and the Socioeconomic units of ICRISAT and SAFGRAD. We have not included their prices in this report, although we sometimes used them to check the prices we have cited.

G.1.5 Accuracy

Prices vary within a market on a given day. One could come up with as many as ten or twelve different prices per kilogram for the same grain depending upon the unit of purchase and the trading partner.

We can only vouch for the accuracy of the prices which were collected by our project personnel. It is clear from looking at some of the series from OFNACER for example, that the prices are probably wrong. Some OFNACER agents explained to us that when a particular grain is not available in the market the day they are collecting prices they write down the price from the previous month. Obviously the price is probably not the same as last month. Unfortunately we had no way of knowing which prices had been treated this way, and therefore they could not be corrected.

G.2 PROBLEMS USING THE PRICE SERIES

Because of the differences between the way prices are collected and monthly prices are calculated, these prices present certain problems for analysis. The OFNACER and ORD prices, although both monthly series, are not at all compatible. One obscures inter-seasonal differences while the other obscures intra-regional differences. For lack of any alternative we have used them in our analysis, but, advisedly.

For inter-regional correlation analysis, the OFNACER prices underestimate regional differences, thus the correlations involving the OFNACER prices may be biased upward. In an analysis of marketing margins, those prices will give overestimated margins.

Similarly, the ORD prices may also lead to correlations that are biased upward because the monthly fluctuations are dampened by the averaging of the mercuriales. The margins calculated using those prices represent average margins for the month.

TABLE G.1

SUMMARY OF AVAILABLE PRICE DATA
January 1983 - January 1985

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
1= Ademtenga		14 mos. (2)[a]			2 mos. (1-2)			14 mos. (2)				
2= Aribinda				7 mos. (1)		2 mos. (1)	3 mos. (1)		2 mos. (1)			
3= Baré		12 mos. (4)			10 mos. (4)			1 mo. (4)			9 mos. (4)	
4= Barsalogo		8 mos. (2)		2 mos. (1)	10 mos. (2)		1 mo. (1)	10 mos. (1-2)				
5= Batié			7 mos. (1)			7 mos. (1-4)						7 mos. (1)
6= Boulsa		13 mos. (2)		3 mos. (1)	13 mos. (2)			13 mos. (2)				
7= Bousouma				2 mos. (1)	6 mos. (2)			8 mos. (2)				
8= Boussé		8 mos. (2)			10 mos. (2)			11 mos. (2)				
9= Dano			7 mos. (1)			6 mos. (1)			4 mos. (1)			7 mos. (1)

TABLE G.1 (con't.)

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
10= Dassouri		18 mos. (2)			19 mos. (2)			17 mos. (2)				
11= Dédougou				5 mos. (1)	1 mo. (1)	9 mos. (1)			10 mos. (1)			
12= Diebougou			6 mos. (1)			6 mos. (1)			5 mos. (1)			6 mos. (1)
13= Dissin			6 mos. (1)			6 mos. (1)						6 mos. (1)
14= Djibasso					1 mo. (1)	9 mos. (1)			8 mos. (1)			
15= Djibo				5 mos. (1)			1 mo. (1)					
16= Dori				5 mos. (1)		2 mos. (1)	1 mo. (1)		2 mos. (1)	2 mos. (1)		2 mos. (1)
17= Gaoue			6 mos. (1)						4 mos. (1)	2 mos. (1)		
18= Garango	4 mos. (2)			6 mos. (1-2)			4 mos. (2)					
19= Gassan				2 mos. (4)	6 mos. (4)		2 mos. (4)	6 mos. (4)				
20= Gorom-Gorom							2 mos. (1)		1 mo. (1)	2 mos. (1)		1 mo. (1)

TABLE G.1 (con't.)

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
21= Guéléoungo		11 mos. (2)			11 mos. (2)			11 mos. (2)			11 mos. (2)	
22= Kokologo	1 mo. (1)	5 mos. (1)		1 mo. (1)	5 mos. (1)		1 mo. (1)	5 mos. (1)		1 mo. (1)	3 mos. (1)	
23= Kongoussi		10 mos. (2)		3 mos. (1)	10 mos. (2)		2 mos. (1-2)	12 mos. (2)			3 mos. (2)	
24= Korsimoro	5 mos. (1)	14 mos. (2)		6 mos. (1)	13 mos. (2)		6 mos. (1)	14 mos. (2)				
25= Koudougou	2 mos. (1)	2 mos. (1)		4 mos. (1)	4 mos. (1-3)		1 mo. (1)	4 mos. (1-3)		4 mos. (1)	3 mos. (1)	
26= Kouka							4 mos. (2)	7 mos. (1)				
27= Koumana								7 mos. (4)				
28= Koupéla	4 mos. (2)		1 mo. (1)	7 mos. (1-2)								
29= Léo	1 mo. (1)	3 mos. (1)			5 mos. (1)		1 mo. (1)	5 mos. (1)		1 mo. (1)	4 mos. (1)	
30= Mané		9 mos. (2)		2 mos. (1-2)	8 mos. (2)			9 mos. (2)				
31= Markoy				3 mos. (1)		2 mos. (1)	2 mos. (1)		2 mos. (1)	3 mos. (1)		2 mos. (1)
32= Moktédo		8 mos. (2)			4 mos. (2)			4 mos. (2)				

TABLE G.1 (con't.)

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
33= N'Dorola				7 mos. (5)	7 mos. (4-5)		7 mos. (5)	7 mos. (5)		7 mos. (5)	7 mos. (5)	
34= Nouna					2 mos. (1)	9 mos. (1)			10 mos. (1)			
35= Ouahigouya				2 mos. (4)	8 mos. (4)			7 mos. (4)				
36= Pissila				2 mos. (1)	15 mos. (2)			15 mos. (2)				
37= Pō		10 mos. (2)			10 mos. (2)			10 mos. (2)				
38= Sabsé		5 mos. (1-2)			4 mos. (2)			12 mos. (2)				
39= Safané				4 mos. (1)		10 mos. (1)			10 mos. (1)			
40= Saponé		19 mos. (2)			19 mos. (2)			19 mos. (2)				
41= Sebba				6 mos. (1)		2 mos. (1)	2 mos. (1)		2 mos. (1)	1 mo. (1)	1 mo. (1)	2 mos. (1)
42= Solenzo				5 mos. (1)		9 mos. (1)		1 mo. (1)	9 mos. (1)			
43= Soumousso		7 mos. (4)			7 mos. (4)			5 mos. (4)			5 mos. (4)	

TABLE G.1 (con't.)

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
44= Tchériba				4 mos. (1)	2 mos. (3)	10 mos. (1-3)			10 mos. (1)			
45= Tchiookui		8 mos. (4)										
46= Tenkodogo	4 mos. (2)			7 mos. (1-2)			5 mos. (2)					
47= Tiébelé		10 mos. 92)			11 mos. (2)			11 mos. (2)			10 mos. (2)	
48= Tikaré					12 mos. (2)			10 mos. (2)				
49= Tougan				4 mos. (1)	2 mos. (1)	9 mos. (1)		2 mos. (1)	10 mos. (1)			
50= Tougouri				6 mos. (1)	16 mos. (2)		3 mos. (1)	16 mos. (2)				
51= Zabré	3 mos. (1-2)			6 mos. (1-2)			3 mos. (2)					
52= Ziniaré		15 mos. (2)			15 mos. (2)			15 mos. (2)				
53= Zitenga		8 mos. (2)			9 mos. (2)			9 mos. (2)				
54= Zorgo	3 mos. (2)	9 mos. (2)		3 mos. (1-2)	9 mos. (2)		3 mos. (2)	9 mos. (2)				
55= Zoungou		7 mos. (2)			16 mos. (2)			7 mos. (2)				

TABLE G.1 (con't.)

Markets	Red Sorghum			White Sorghum			Millet			Maize		
	sack	tine	plate	sack	tine	plate	sack	tine	plate	sack	tine	plate
101= Marché Central	12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)	
102= Gounghin	12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		11 mos. (4)	11 mos. (4)	
103= Larlé	12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		11 mos. (4)	11 mos. (4)	
104= Sankaryaré	12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)	
105= Zabré Daga	12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		10 mos. (4)	10 mos. (4)	
106= Baskui	13 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)		12 mos. (4)	12 mos. (4)	
201= Grand Marché	4 mos. (4)	1 mo. (4)		13 mos. (4)	13 mos. (4)		13 mos. (4)	13 mos. (4)		13 mos. (4)	13 mos. (4)	
202= St. Etienne	3 mos. (4)	1 mo. (4)		13 mos. (4)	13 mos. (4)		13 mos. (4)	13 mos. (4)		13 mos. (4)	13 mos. (4)	
203= Ouézzin-ville	4 mos. (4)			6 mos. (4)	6 mos. (4)		7 mos. (4)	6 mos. (4)				

NOTES: a) The number in parentheses refers to the system which collected the prices.

1 = OFNACER
2 = The ORDs
3 = The CRED rapid reconnaissance urban and village team
4 = The CRED study teams
5 = Agents of the Niangoloka-Djonkolé project

Differences in the price collection techniques are discussed in this Appendix.

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TABLE G.2

MONTHLY WHITE SORGHUM PRICES IN VARIOUS MARKETS
January 1983 - January 1985
(in FCFA)

MARKETS IN OUAGADOUGOU

Markets	Marché Central		Gounghin		Larlé		Sankaryaré		Zabré Dana		Baskui		Mean	
Date	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine
1/83														
2/83														
3/83														
4/83														
5/83														
6/83														
7/83														
8/83														
9/83														
10/83														
11/83														
12/83														
1/84													8500.0	1350.0
2/84	10375	1625	11500	2025	10250	1675	10000	1575	10250	1625	11750	2012	10585.0	1743.5
3/84	11625	1850	12125	2150	12000	2066	11666	1866	11666	1850	12000	2100	11698.0	1953.0
4/84	12083	1950	12000	2000	12166	2033	12333	2000	12250	1950	12166	2033	11971.0	1966.7
5/84	11900	2000	12666	2160	12375	2075	12200	2010	12200	2040	12300	2040	12063.0	2017.9
6/84	12000	2000	12365	2137	12000	2000	11250	1900	12025	2025	11750	1950	11770.0	1973.2
7/84	12700	2240	13400	2410	13000	2320	12400	2120	12600	2220	13375	2350	12711.0	2225.2
8/84	13625	2275	14000	2400	13625	2300	13500	2275	13625	2250	13333	2316	13484.0	2275.2
9/84	13862	2450	14000	2525	13812	2475	13812	2475	13812	2487	13812	2475	13766.0	2437.5
10/84	13650	2460	13550	2420	13550	2460	13650	2480	13650	2480	13550	2460	13329.0	2382.9
11/84	12000	2000	12125	2025	12000	2000	12000	2000	12000	2000	12000	2000	11854.0	1960.7
12/84	11250	1925	11250	1937	11250	1925	11250	1937	11250	1925	11250	1937	10929.0	1905.4
1/85	11000	2000	11000	2000	11000	2000	11000	2000	11000	2000	11000	2000	10714.0	1942.9

TABLE G.2 (con't.)

MARKETS IN BOBO-DIOULASSO

Markets / Date	Grand Marché		St. Etienne		Ouézzinville		Mean	
	sack	tine	sack	tine	sack	tine	sack	tine
1/83								
2/83								
3/83								
4/83								
5/83								
6/83								
7/83								
8/83								
9/83								
10/83								
11/83								
12/83								
1/84	8500	1350	8600	1400			8550.0	1375.0
2/84	9966	1666	10000	1666	10500	1750	10156.0	1694.4
3/84	10800	1787	10925	1825	10800	1800	10842.0	1804.2
4/84	10800	1800	10800	1800	10800	1800	10800.0	1800.0
5/84	10800	1800	10800	1800	10800	1800	10800.0	1800.0
6/84	11000	1800	11000	1833	10800	1800	10933.0	1811.1
7/84	11500	1916	11600	1933	11700	1950	11600.0	1933.3
8/84	12680	2110	13140	2180			12910.0	2145.0
9/84	13250	2175	15000	2200			14125.0	2187.5
10/84	11700	1920	12000	2100			11850.0	2010.0
11/84	8750	1700	7150	1725			7950.0	1712.5
12/84	9000	1750	8500	1500			8750.0	1625.0
1/85	9000	1600	8833	1500			8916.7	1550.0

TABLE G.2 (con't.)

Markets	Ademtenga	Aribinda		Baré	Barsalogo		Batié	Boulsa		Bousouma	
Date	sack	sack	kilogram	tine	sack	tine	kilogram	sack	tine	sack	tine
1/83						1100			1115		
2/83											
3/83											
4/83											
5/83									1400		
6/83	1650								1400		
7/83											
8/83											
9/83											
10/83											
11/83											
12/83											
1/84		12000		1200		1850		8400	1700		1600
2/84		14800		1225		1900			1750	12000	2000
3/84		14800		1390		2000	150	12000	1925	12000	2100
4/84		14800		1750		2300	150		1925		2100
5/84		15000			13800	2200		13500	1925		2400
6/84				1750		2300	150		1925		2375
7/84		15000					175		2450		
8/84		19000	190	2150		2250	175		2625		
9/84	2450		190	2000	13500	2250	175		2450		
10/84				1250		1400	80		1750		
11/84				1083							
12/84				1100							
1/85											

TABLE G.2 (con't.)

Markets	Boussé	Dano	Dassouri	Dédougou			Diebougou	Dissin	Djibasso		Djibo
Date	tine	kilogram	tine	sack	tine	kilogram	kilogram	kilogram	tine	kilogram	sack
1/83	1150		1300								
2/83	1050		1850								
3/83	1425										
4/83	1400		1800								
5/83	1400		1800								
6/83	1650										
7/83			2135								
8/83	1750		2500								
9/83			2600								
10/83											
11/83											
12/83	2000		1350								
1/84			2000	6200		75				60	10500
2/84			2100	7500							10500
3/84	2433	120	2467	10000		100	110			92	10500
4/84		120	2600	10000		100	126	110		100	10500
5/84			2600	10000		100				100	14900
6/84		120	2752		1900	100	126	110		100	
7/84	3000	120	3000			100	130	120		100	
8/84		135	3000			130	130	120		115	
9/84		135	3033			130	151	120		115	
10/84			1575			75		100	1700	87	
11/84											
12/84			1925								
1/85											

TABLE G.2 (con't.)

Markets	Dori		Garango	Gassan		Guéléoungo	Kokologo		Kongoussi	
Date	sack	kilogram	sack	sack	tine	tine	sack	tine	sack	tine
1/83										1150
2/83										1250
3/83										1500
4/83										1600
5/83										1500
6/83										1400
7/83										1400
8/83										
9/83										
10/83										
11/83										
12/83										
1/84			8500	6600		2437				
2/84	11000		10000	8000	1250	1565				
3/84	11000		11000		1500	1620				
4/84	11000					2500			13500	2250
5/84	15000		9800		1900	2060			13500	2250
6/84						2040				
7/84			10400			2090		2500		
8/84	16000	160	11400			2240	14400	2400		2250
9/84		160			2250	2100		1500	13500	
10/84					1900			1500		
11/84						1543		1600		
12/84					1400	1520				
1/85										

TABLE G.2 (con't.)

Markets	Korsimoro		Koudougou		Koupéla	Léo	Mané		Markoy		Moktédo
Date	sack	tine	sack	tine	sack	tine	sack	tine	sack	kilogram	tine
1/83		1225									
2/83		1295									
3/83		1400									
4/83		1400									
5/83		1575									
6/83		1575									
7/83											
8/83											
9/83											
10/83											
11/83											
12/83											
1/84		1575			9000			1500			
2/84		1925			11400						
3/84		1925			11000			2000			2000
4/84	12000	1750			11000			2100			
5/84	12600	2100			12000		12000	2100	15000		
6/84	13200	2200				2600		1750			
7/84	13200	2250			14400	1890		2400	16000		3200
8/84	13500		12625		14400	1950		2300	17000	170	
9/84	13500		12000	2400		1650		2000		170	2933
10/84			12600	2500			13000				1583
11/84			10500	2100		1925					
12/84				2250							
1/85											

TABLE G.2 (con't.)

Markets	N'Dorola		Nouna		Ouahigouya		Pissila		Pô	Sabsé	Safané	
Date	sack	tine	tine	kilogram	sack	tine	sack	tine	tine	tine	sack	kilogram
1/83								1100				
2/83								1250				
3/83								1300		1100		
4/83								1400		1200		
5/83								1400		1400		
6/83								1450		1500		
7/83												
8/83												
9/83												
10/83												
11/83												
12/83												
1/84				57			10500		1925		5500	55
2/84	9000	1375					10500	4700	1635			
3/84	9000	1500		75		1925		2100	1575		10000	100
4/84	9000	1500		92		1987		2200	1950		10000	100
5/84	9000	1500		92	11000	1900		2100	1950		10000	100
6/84	10500	1750		92	11500	1933		2100	2280			100
7/84				92		2050		2300	2275			100
8/84	11100	1850		110		2100		2500	2100			120
9/84	10500	1750		110		2100		2400	2158			120
10/84			1700	85		2200		1850				75
11/84			1100						1558			55
12/84												
1/85												

TABLE G.2 (con't.)

Markets	Saponé	Sebba		Solenzo		Soumousso	Tchériba			Tenkodogo	Tiébelé
Date	tine	sack	kilogram	sack	kilogram	tine	sack	tine	kilogram	sack	tine
1/83	1000										
2/83	1580										
3/83	1650										
4/83	1865										
5/83	2150										
6/83	2285										
7/83	2535										
8/83	2550										
9/83	2585										
10/83											
11/83											
12/83											
1/84	2185	13000		5400	54		5500		55	8500	2217
2/84	2500	12500		7075						11500	1520
3/84	2917	12500		8750	87		9250		92	11000	1690
4/84	2785	12500		10000	100		10000		100	11000	2450
5/84	3030	12500		10000	100		10000		100	10000	2450
6/84	3065				102	1750			100		2100
7/84	3100				100	1750			100	12000	2450
8/84	3250	22000	220		130	2116			110	12000	2217
9/84			220		130	2075		2200	110		2100
10/84	3116				75	1775		1500	75		
11/84						1016			55		1750
12/84	2500					1265					1750
1/85											

TABLE G.2 (con't.)

Markets	Tikaré	Tougan			Tougouri		Zabré	Ziniaré	Zitenga	Zorgo		Zoungou
Date	tine	sack	tine	kilogram	sack	tine	sack	tine	tine	sack	tine	tine
1/83	1200					900		1200	1050			2200
2/83	1250					1100		1200	1200			
3/83	1350					1200		1250	1250	1882		
4/83						1300		1400	1500			
5/83	1350					1300		1635	1610	2227		
6/83						1350		1685	1650	2040		
7/83								1770	1800	2400		
8/83								1765	1800			
9/83												3920
10/83								1850		2133		
11/83										2040		
12/83								2050	2050			
1/84		8000		80	10500	1500	7500				2253	2200
2/84	1575				12000	2000	10000			13000	1670	
3/84	1575	10000		100	15000	1750	11000				2000	1882
4/84		10000		100		2500		1965				
5/84	2250	10000		100	14000	2500		1835			2147	2227
6/84	2025			100		2250	12750	1930			2400	2040
7/84	2000			100	15300	2500	11000			13000	2865	2400
8/84	2250			125		2500	12000			13500		
9/84	2250			125	15300	2250					2933	3920
10/84	2025		1900	95		1750					2400	2133
11/84			1500					1816			2000	2040
12/84								1750				
1/85												

TABLE G.3

MONTHLY MILLET PRICES IN VARIOUS MARKETS
January 1983 - January 1985
(in FCFA)

MARKETS IN OUAGADOUGOU

Markets	Marché Central		Gounghin		Larlé		Sankaryaré		Zabré Daga		Baskui		Mean	
Date	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine
1/83														
2/83														
3/83														
4/83														
5/83														
6/83														
7/83														
8/83														
9/83														
10/83														
11/83														
12/83														
1/84													8500.0	1500.0
2/84	11700	1850	12100	2075	10250	1675	10500	1725	10300	1650	11750	2112	10971.0	1826.9
3/84	12125	2000	12750	2325	12500	2166	12000	2050	12000	2000	12500	2225	12250.0	2106.0
4/84	12625	2050	10075	2175	12666	2166	12666	2066	12625	2050	12666	2166	12052.0	2073.6
5/84	10450	2060	12900	2160	12625	2175	12583	2116	12700	2120	12800	2160	11748.0	2091.7
6/84	12200	2075	12562	2237	12250	2025	12250	2075	12375	2075	12250	2075	11803.0	2089.9
7/84	13100	2380	13640	2440	13300	2400	13125	2325	13100	2340	13300	2420	13177.0	2345.4
8/84	13750	2300	14000	2400	13625	2300	13625	2300	13625	2300	13750	2350	13921.0	2357.1
9/84	14062	2500	14100	2575	14062	2562	13937	2525	14037	2550	14000	2575	14243.0	2533.9
10/84	13800	7200	13900	2560	13800	2520	13800	2520	13800	254[illegible]	13750	2500	14121.0	3162.9
11/84	12000	2000	12125	2025	12000	2000	12125	2000	12000	2000	12000	2000	12464.0	2057.1
12/84	11250	1925	11250	1937	11250	1925	11250	1937	11250	1925	11250	1937	11500.0	1962.5
1/85	11000	2000	11000	2000	11000	2000	11000	2000	11000	2000	11000	2000	10905.0	1959.5

TABLE G.3 (con't.)

MARKETS IN BOBO-DIOULASSO

Markets / Date	Grand Marché		St. Etienne		Ouézzinville		Mean	
	sack	tine	sack	tine	sack	tine	sack	tine
1/83								
2/83								
3/83								
4/83								
5/83								
6/83								
7/83								
8/83								
9/83								
10/83								
11/83								
12/83								
1/84	8500	1500	9000	4050	9000		8833.3	2775.0
2/84	10200	1700	9900	1650	10433	1850	10178.0	1733.3
3/84	11875	1975	11875	1975	12000	2000	11917.0	1983.3
4/84	11040	1840	11200	1850	11200	1866	11147.0	1852.2
5/84	11100	1850	11280	1880	12000	2000	11460.0	1910.0
6/84	12300	2066	13200	2200	13200	2200	11711.0	2155.6
7/84	12675	2112	13200	2200	13200	2200	13025.0	2170.8
8/84	15075	2550	16225	2662			15650.0	2606.3
9/84	15500	2450	15600	2650			15550.0	2550.0
10/84	16000	2300	13000	2200			14500.0	2250.0
11/84	15000	2375	10300	2200			12650.0	2287.5
12/84	13000	2150	11375	2000			12188.0	2075.0
1/85	10333	1716	11000	1833			10667.0	1775.0

TABLE G.3 (con't.)

Markets	Ademtenga	Aribinda		Baré	Barsalogo		Boulsa	Boussouma	Boussé	Dano	Dassouri
Date	tine	sack	kilogram	tine	sack	tine	tine	tine	tine	kilogram	tine
1/83	1300					1100	1225		1250		1300
2/83	1250								1300		1800
3/83	1400								1780		
4/83									1450		1800
5/83							1400		1575		2000
6/83	1650						1400		1800		
7/83									3200		2400
8/83									1850		2400
9/83									2933		2700
10/83									1533		
11/83											
12/83									2100		1884
1/84	1575	12500				2000	1400	1600			2015
2/84	1925					2000	1750	2200			2200
3/84	1925			1750		2250	1925	2100		120	
4/84	2100					2350	1925	2250		120	2600
5/84	2100				13900	2250	1925	2450			2600
6/84	2100					2300	1925	2400		120	2750
7/84	2275	16500				2250	2450	2450		120	
8/84	2800	20500	205			2300	2625	2625			3000
9/84	2800		205				2450				3000
10/84	1925					1500	1750				2450
11/84											
12/84											2100
1/85											

TABLE G.3 (con't.)

Markets	Dédougou	Diebougou	Djibasso	Djibo	Dori		Gaoua	Garango	Gassan	
Date	kilogram	kilogram	kilogram	sack	sack	kilogram	kilogram	sack	sack	tine
1/83										
2/83										
3/83										
4/83										
5/83										
6/83										
7/83										
8/83										
9/83										
10/83										
11/83										
12/83										
1/84	60		60	12000					7800	1225
2/84								11000	8100	1100
3/84	102		93							1600
4/84	102	126	102		17000					
5/84	102		102					11400		
6/84	102	126	102				120			2000
7/84	102	130	102				150	12000		
8/84	135	130				170	150	11400		
9/84	135	154	116			170	150			
10/84	80		87							
11/84	60									1700
12/84										1500
1/85										

TABLE G.3 (con't.)

Markets	Gorom-Gorom		Guéléoungo	Kokologo		Kongoussi		Korsimoro		Koudougou	
Date	sack	kilogram	tine	sack	tine	sack	tine	sack	tine	sack	tine
1/83							1350		1225		
2/83							1350		1335		
3/83							1500		1450		
4/83							1500		1575		
5/83									1600		
6/83							1800		1645		
7/83							1500				
8/83											
9/83											
10/83											
11/83											
12/83											
1/84			2310						1645		
2/84			1565						1925		
3/84			1620						2100		
4/84			2345				1800	12900	1925		
5/84			2310			13500	2250	13200	2200		
6/84			2275				2025	13800	2300		
7/84			2215		2500		2025	14000	2350		
8/84	20000	200	2115	15000	2500		2475	15000	2500	12500	
9/84			2100		2500	14850	2475	15000			2700
10/84			1867		1650						2250
11/84	15500		1520		1600						2100
12/84											2200
1/85											

TABLE G.3 (con't.)

Markets	Kouka		Koumana	Léo		Mané	Markoy		Moktédo	N'Dorola	
Date	sack	tine	tine	sack	tine	tine	sack	kilogram	tine	sack	tine
1/83											
2/83											
3/83											
4/83											
5/83											
6/83											
7/83											
8/83											
9/83											
10/83											
11/83											
12/83											
1/84	12000	925				1500					
2/84		1050								9000	1500
3/84		1050	1750			2000			2135	9000	1500
4/84		1775	1750			2200				9000	1500
5/84	13000	1775				2200				9000	1500
6/84		1775			2800	2000				11200	1875
7/84	14000	2025	1925		2100	2500			3200		
8/84	14000		2125	12600	2100	2400	19000	190		13200	2200
9/84					1800	2000		190	2933	13200	2200
10/84			1875			1500			1533		
11/84			1050		2100		14500				
12/84			1000								
1/85											

TABLE G.3 (con't.)

Markets	Nouna	Ouahigouya	Pissila	Pô	Sabsé	Safané	Saponé	Sebba		Solenzo	
Date	kilogram	tine	tine	tine	tine	kilogram	tine	sack	kilogram	tine	kilogram
1/83			1100				1550				
2/83			1300				1535				
3/83			1350		1000		1600				
4/83			1500		1000		1850				
5/83			1450		1300		2230				
6/83			1500		1500		2250				
7/83							2500				
8/83							2600				
9/83							2650				
10/83											
11/83											
12/83											
1/84	60			2217	1750	60	2185	14000			55
2/84			1700	1635	1900		2585				
3/84	77		2100	1925	1900	105	2967				88
4/84	93		2200	2275	2000	105	2765				102
5/84	93	2000	2200	2275	2500	105	3030				102
6/84	93	2000	2200	2565	2750	105	3115				102
7/84	93	2200	2500	2275	2250	105	3200				102
8/84	116	2337	2750	2275	2250	125	3250	24000	240		
9/84	115	2400	2500	2100		125			240		135
10/84	90	2650	1750			80	3116				80
11/84	56	2250		1575		55				1100	55
12/84							2416				
1/85											

TABLE G.3 (con't.)

Markets	Soumousso	Tchériba	Tenkodogo	Tiébelé	Tikaré	Tougan		Tougouri		Zabré	Ziniaré
Date	tine	kilogram	sack	tine	tine	tine	kilogram	sack	tine	sack	tine
1/83									1000		1500
2/83									1200		1300
3/83									1250		1450
4/83									1500		1550
5/83					1400				1500		1745
6/83									1400		1800
7/83											1885
8/83											1885
9/83											
10/83											2000
11/83											
12/83											2000
1/84		60		2217	1350		82		1700		
2/84			12000	1695	1800				2100	10000	
3/84		93		1690	1800		105		2000		
4/84		102		2450			105		3000		2035
5/84		102	11400	2450	2250		105	14400	2500		2100
6/84	1950	102	12750	2275	2100		105		2250		2330
7/84		102	12500	2450	2150		105	16500	2750	11000	
8/84	2000	112	12000	2217	2250		127		2750	12000	
9/84		112		2100	2250		127	16500	2500		
10/84	2000	80			2025	1900	95		2000		
11/84	1300	56		1750		1500	76				1850
12/84	1375			1750							1766
1/85											

TABLE G.3 (con't.)

Markets	Zitenga	Zorgo		Zoungou
Date	tine	sack	tine	tine
1/83	1200			
2/83	1350			
3/83	1425			
4/83	1750			
5/83	1700			
6/83	1785			
7/83	1825			
8/83	2000			
9/83				
10/83				
11/83				
12/83	2000			
1/84			2400	2400
2/84		11400	1800	
3/84			2135	
4/84				
5/84			2320	2535
6/84			2265	2600
7/84		13000	2800	2800
8/84		13500		
9/84			2933	3200
10/84			2933	2600
11/84			2133	2333
12/84				
1/85				

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE G.4

MONTHLY RED SORGHUM PRICES IN VARIOUS MARKETS
January 1983 - January 1985
(in FCFA)

MARKETS IN OUAGADOUGOU

Markets / Date	Marché Central		Gounghin		Larlé		Sankaryaré		Zabré Daga		Baskui		Mean	
	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine
1/83														
2/83														
3/83														
4/83														
5/83														
6/83														
7/83														
8/83														
9/83														
10/83														
11/83														
12/83														
1/84														
2/84	10125	1550	10250	1625	8150	1525	9900	1550	11000	1700	10050	1600	9710.7	1591.7
3/84	11000	1737	10875	1787	11000	1737	10500	1666	10666	1666	10875	1775	10819.0	1728.5
4/84	10875	1737	11500	1862	10875	1737	11000	1800	11000	1750	11000	1775	11042.0	1777.1
5/84	11000	1800	9220	1810	11400	1860	11300	1880	10800	1780	11250	1825	10781.0	1815.0
6/84	10750	1750	8525	1800	10500	1725	11375	1875	10875	1775	10875	1775	10557.0	1783.3
7/84	11100	1860	11125	1875	11000	1775	11100	1860	11100	1820	11100	1820	11088.0	1835.0
8/84	10750	1800	11000	1800	11000	1800	11000	1800	11000	1800	11000	1800	10958.0	1800.0
9/84	11000	1775	11125	1800	11000	1725	11000	1750	11000	1700	11000	1700	11021.0	1741.7
10/84	12000	1960	11958	2000	11900	1960	12000	1980	12000	2000	12000	1980	11976.0	1980.0
11/84	8375	1550	8166	1533	8375	1550	8428	1557	8500	1575	8375	1550	8370.0	1552.6
12/84	8000	1500	8000	1500	8000	1500	8000	1500	8000	1500	8000	1500	8142.9	1500.0
1/85	8000	1500	8000	1500	8000	1500	8000	1500	8000	1500	8000	1500	8000.0	1500.0

TABLE G.4 (con't.)

MARKETS IN BOBO-DIOULASSO

Markets	Grand Marché		St. Etienne		Ouézzinville	Mean	
Date	sack	tine	sack	tine	sack	sack	tine
1/83							
2/83							
3/83							
4/83							
5/83							
6/83							
7/83							
8/83							
9/83							
10/83							
11/83							
12/83							
1/84			7625		8000	7812.5	
2/84	8500		8500		8500	8500.0	
3/84			10800	1800	8500	9650.0	1800.0
4/84							
5/84	10500	1750			11500	11000.0	1750.0
6/84	11000					11000.0	
7/84							
8/84							
9/84							
10/84							
11/84							
12/84	9000					9000.0	
1/85							

TABLE G.4 (con't.)

Markets / Date	Ademtenga	Baré	Barsalogo	Batié	Boulsa	Boussé	Dano	Dassouri	Diebougou	Dissin	Gaoua
	tine	tine	tine	kilogram	tine	tine	kilogram	tine	kilogram	kilogram	kilogram
1/83	1225				1115	1100		1315			
2/83	1150					1050		1450			
3/83	1300					1425					
4/83						1400		1600			
5/83					1400	1400		1600			
6/83	1575				1400	1650					
7/83								2300			
8/83						1750		2700			
9/83								2700			
10/83											
11/83											
12/83						2150					
1/84	1400	1000	1600		1295			1900			
2/84	1925	1093	1750		1750			2000			
3/84	1925	1300	1900	125	1925		125	2067			125
4/84	1925	1500	1900	125	1925		150	2450	126	125	125
5/84	1925	1550	1900		1925			2485			137
6/84	1925	1600	1950	125	1925		150	2600	126	125	132
7/84	2100	1683	2200	180	2450		150	2800	130	125	135
8/84	2625	3000	2000	175	2625		135	3066	130	120	137
9/84	2450	2000		180	2450		135	2767	152	125	
10/84	1225	1137		81	1750		75	1466	75	100	
11/84		800									
12/84		866						1800			
1/85											

TABLE G.4 (con't.)

Markets	Garango	Guéléoungo	Kokologo		Kongoussi	Korsimoro		Koudougou		Koupéla	
Date	sack	tine	sack	tine	tine	sack	tine	sack	tine	sack	kilogram
1/83					1150		1225				
2/83					1250		1295				
3/83							1400				
4/83					1500		1400				
5/83							1575				
6/83					1450		1575				
7/83											
8/83											
9/83											
10/83											
11/83											
12/83											
1/84		2275					1575				275
2/84	10000	1340					1750			11400	
3/84		1380					1925				
4/84		2275			1600	11400	1900				
5/84	10000	2130			1600	12000	2000			11000	
6/84		2120			2250	12000	2000				
7/84	11000	2120		2100	2250	11100	1850			14000	
8/84	11000	2115	15000	2500	2250	12000	2000			13500	
9/84		2100		1750	2474						
10/84				1300				11100	1850		
11/84		1512		1450				9250	1850		
12/84		1500									
1/85											

TABLE G.4 (con't.)

Markets / Date	Léo		Mané	Moktédo	Pô	Sabsé	Saponé	Soumousso	Tchiookui	Tenkodogo	Tiébelé
	sack	tine	tine	tine	tine	tine	tine	tine	tine	sack	tine
1/83							1450				
2/83							1415				
3/83				1800		900	1535				
4/83						950	1715				
5/83							2020				
6/83						1400	2300				
7/83				3000			2435				
8/83							2600				
9/83				2933			2665				
10/83				1400							
11/83											
12/83											
1/84			1400		1550		2035				2217
2/84					1460		2250		1050	9000	1575
3/84			1850	1800	1750		2533				1690
4/84			2000		1550		2335				2450
5/84			1050		1550	1500	2430		1800	10000	2450
6/84			1800		1620	1500	2515	1750	2000		2450
7/84			2200	3000	1750		2635	1666	1875	11400	2217
8/84	9000	1500	2200		2100		2600	1816	2375	11400	2100
9/84		1500	2000	2933	2100			2000	1833		
10/84			1750	1400			2583	1410	1875		
11/84		1400			1228			800	1000		1750
12/84							1850	1000			1750
1/85											

TABLE G.4 (con't.)

Markets	Zabré	Ziniaré	Zitenga	Zorgo		Zoungou
Date	sack	tine	tine	sack	tine	tine
1/83		1200	1050			
2/83		1100				
3/83		1300	1250			
4/83		1500	1400			
5/83		1600	1550			
6/83		1625	1620			
7/83		1685	1675			
8/83		1685	1650			
9/83						
10/83		1885				
11/83						
12/83		2150	2100			
1/84					2173	2000
2/84	9000			11000	1465	
3/84					1735	
4/84		1850				
5/84		1850			2066	1920
6/84		1850			2265	2000
7/84	9600			11000	2600	2200
8/84	12000			12000		
9/84					2933	3200
10/84					1933	1467
11/84		1750			1520	1653
12/84		1750				
1/85						

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

TABLE G.5

MONTHLY CORN PRICES IN VARIOUS MARKETS
January 1983 - January 1985
(in FCFA)

MARKETS IN OUAGADOUGOU

Markets	Marché Central		Gounghin		Larlé		Sankaryaré		Zabré Daga		Baskui		Mean	
Date	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine	sack	tine
1/83														
2/83														
3/83														
4/83														
5/83														
6/83														
7/83														
8/83														
9/83														
10/83														
11/83														
12/83														
1/84													9250.0	1450.0
2/84	12000	1875					9800	1200			13500	2500	11233.0	1800.0
3/84	12875	2400	13000	2500	13000	2500	13000	2450			13000	2500	12638.0	2362.5
4/84	13000	2366	13000	2400	13000	2300	13000	2300	13000	2366	13000	2400	12761.0	2288.7
5/84	12700	2160	12833	2340	13000	2333	12875	2200	12833	2166	13000	2400	12663.0	2214.3
6/84	12375	2200	12833	2325	12375	2200	12250	2250	12166	2200	12500	2166	12271.0	2177.4
7/84	13200	2420	13800	2480	13625	2475	13200	2400	13450	2400	13500	2466	13168.0	2363.1
8/84	12500	2050	13500	2300	13000	2150	12750	2100	12750	2150	12750	2000	12668.0	2092.9
9/84	11375	2000	11750	2000	10875	2000	11275	2000	11250	2000	11625	1800	11300.0	1957.1
10/84	9400	1820	10000	1880	9500	1840	9083	1816	9300	1820	9200	1800	9583.3	1811.0
11/84	8125	1525	8375	1600	8250	1550	8000	1500	8250	1525	8125	1525	8250.0	1566.1
12/84	8250	1575	8250	1575	8250	1550	8250	1575	8250	1587	8250	1550	8285.7	1558.9
1/85	8700	1600	8700	1600	8625	1600	8700	1600	8700	1600	8700	1600	8660.7	1576.2

TABLE G.5 (con't.)

MARKETS IN BOBO-DIOULASSO

Markets	Grand Marché		St. Etienne		Mean	
Date	sack	tine	sack	tine	sack	tine
1/83						
2/83						
3/83						
4/83						
5/83						
6/83						
7/83						
8/83						
9/83						
10/83						
11/83						
12/83						
1/84	9250	1450	8750	1400	9000.0	1425.0
2/84	9633	1625	9633	1625	9633.3	1625.0
3/84	10950	1825	11400	1900	11175.0	1862.5
4/84	11325	1887	10800	1800	11063.0	1843.8
5/84	11400	1900	11550	1925	11475.0	1912.5
6/84	11400	1900	11400	1900	11400.0	1900.0
7/84	11400	1900	11400	1900	11400.0	1900.0
8/84	11425	1900	12000	2000	11713.0	1950.0
9/84	10950	1900	11000	1950	10975.0	1925.0
10/84	10600	1700	9170	1720	9885.0	1710.0
11/84	8625	1737	8812	1675	8718.8	1706.3
12/84	8500	1500	8500	1450	8500.0	1475.0
1/85	8500	1433	8500	1383	8500.0	1408.3

TABLE G.5 (con't.)

Markets	Baré	Batié	Dano	Diebougou	Dissin	Dori		Gaoua	Gorom-Gorom		Guéléoungo
Date	tine	kilogram	kilogram	kilogram	kilogram	sack	kilogram	sack	sack	kilogram	tine
1/83											
2/83											
3/83											
4/83											
5/83											
6/83											
7/83											
8/83											
9/83											
10/83											
11/83											
12/83											
1/84	1150										2275
2/84	1250										1575
3/84	1500	100	110					12500			1540
4/84		100	120	110	100	15500		12500			2275
5/84											1730
6/84	1750	100	120	110	100						1735
7/84		120	120	120	110						1735
8/84	1650	85	120	100	80		155			165	1385
9/84	1000	70	60	85	80		155		16500		1348
10/84	1125	67	72	78	80						
11/84	1050					10500			11000		1242
12/84	1116										1315
1/85											

TABLE G.5 (con't.)

Markets	Guéléoungo	Kokologo		Kongoussi	Kougougou		Léo		Markoy	
Date	tine	sack	tine	tine	sack	tine	sack	tine	sack	tine
1/83				1200						
2/83										
3/83										
4/83				1500						
5/83										
6/83				1400						
7/83										
8/83										
9/83										
10/83										
11/83										
12/83										
1/84	2275									
2/84	1575									
3/84	1540									
4/84	2275									
5/84	1730									
6/84	1735							2200		
7/84	1735								17000	
8/84	1385	12000	2000		12500		9000	1500	16500	165
9/84	1348		1500		11500	2300		1500		165
10/84			1000		11400	1900				
11/84	1242				10000	2000		1400	11500	
12/84	1315									
1/85										

TABLE G.5 (con't.)

Markets	N'Dorola		Sebba			Soumousso	Tiébelé
Date	sack	tine	sack	tine	kilogram	tine	tine
1/83							
2/83							
3/83							
4/83							
5/83							
6/83							
7/83							
8/83							
9/83							
10/83							
11/83							
12/83							
1/84							1965
2/84	9000	1500					
3/84	9000	1500					1875
4/84	9000	1500					2500
5/84	9000	1500					2500
6/84	9600	1600				1612	2100
7/84							2500
8/84	10500	1750	20500		205	1750	1767
9/84	10500	1750			205	1075	2100
10/84						1000	
11/84				1350			1400
12/84						1360	1050
1/85							

University of Michigan, The Dynamics of Grain Marketing in Burkina Faso, 1986.

APPENDIX H

ANALYSIS OF CORRELATION OF GRAIN PRICES

APPENDIX H

ANALYSIS OF CORRELATION OF GRAIN PRICES

The size of marketing margins is an indication of the degree of market efficiency. Large margins between farmgate prices and consumer prices can occur for two reasons: high real marketing costs, which cause consumer prices to be much higher than farm prices; or monopolistic elements in the marketing system which are earning excess profits. Two methods, an indirect and a direct approach, can be used to examine whether there are excess profits, or whether marketing margins represent real costs.

The direct approach is to calculate marketing costs, and compare price differences to those costs. The indirect approach examines intermarket efficiency by examining the movement of prices in markets that are connected by trade -- analyzing the correlation of price series in different markets. The methodologies used for both these analyses are described in this appendix.

H.1 INTERMARKET CORRELATION OF PRICES AS AN INDICATION OF MARKET INTEGRATION

When two markets are perfectly integrated we expect their prices to differ by no more than the cost of transferring goods between them: $P_2 - P_1 + T$. If there were no cost to transferring goods between markets we would expect the prices in the two markets to be identical. If T is positive, but small, then P_1 and P_2 would be highly correlated. Regardless of the magnitude of T, there is a band within which P_2 can vary without inducing a flow of goods between the markets.

As transfer costs increase, the band widens. The wider the band, the lower we expect the correlation between prices to be, because prices can vary more without causing a change in the flow of goods. If we expect transfer costs to increase with the distance between markets, we expect a lower correlation between prices in more distant markets. Therefore, we cannot just look at price correlations to determine the degree of integration. We need to know the magnitude of transfer costs.

Another problem with using correlation coefficients stems from the fact that arbitrage does not occur instantaneously. Prices may be moving toward a new equilibrium level and still be out of line for one or two market periods. Correlation analysis cannot take this movement from one equilibrium to another into account. In an area where market supply conditions are highly variable, and markets are constantly adjusting to new equilibria, we would hardly expect the correlation between prices in different markets to be close to 1.

The theory of market integration suggests that the higher transfer costs between two markets are, the lower will be the degree of correlation between prices in those markets. We cannot, however, simply use price correlations to test hypotheses about the degree of integration between markets. Low correlations do not necessarily imply poorly integrated markets. The theory says nothing about the absolute magnitude of the correlations. Therefore, we can only use the price correlations to confirm our expectations about the relationships between markets. Knowledge of local supply and demand conditions can help understand the correlation coefficients.

H.2 CORRELATION COEFFICIENTS FOR MONTHLY GRAIN PRICES

Correlation coefficients for grain prices in different markets were calculated using the prices presented in Appendix G. Since all the prices were from the same year, if we simply correlated prices, the correlation coefficients would be biased upwards because of the regular and significant seasonal price movements. Therefore, we first detrended the price data, and calculated correlation coefficients using the residuals.

An explanation of the procedure follows.

1. For each crop/measure combination we extracted the seasonal price trend by doing a 3rd degree polynomial regression with price as the dependent variable and time as the independent variables:

$$P_{i_{j_t}} = \alpha_0 + \alpha_1 T + \alpha_2 T^2 + \alpha_3 T^3 + e_{i_{j_t}}$$

where $P_{i_{j_t}}$ is the price of crop i, measure j, in month t.

T is the month.

$e_{i_{j_t}}$ is the residual from the regression.

2. The residuals were saved and correlated instead of prices.

The tables of correlation coefficients which follow, Tables H.1-H.11, are the correlation coefficients for the detrended prices. In these tables we only present correlation coefficients for markets where four or more pairs of prices (not necessarily for consecutive months) were available. The tables also indicate the level of significance of the calculated coefficient.

TABLE H.1

CORRELATION COEFFICIENTS FOR
DETRENDED WHITE SORGHUM PRICES FOR 100 KILOGRAM SACK

	Dédougou 1	Tougan 49	Nouna 34	Djibasso 14	Solenzo 42	Tchériba 44	Safané 39	Dano 9	Diébougou 12	Batié 5	Dissin 13	Tougouri 50	Korsimoro 24
Dédougou 1													
Tougan 49	.89 (.00) N=9												
Nouna 34	.83 (.01) N=9	.74 (.02) N=9											
Djibasso 14	.93 (.00) N=9	.75 (.02) N=9	.85 (.00) N=9										
Solenzo 42	.93 (.00) N=10	.72 (.03) N=9	.92 (.00) N=9	.94 (.00) N=9									
Tchériba 44	.85 (.00) N=9	.56 (.12) N=9	.68 (.04) N=9	.93 (.00) N=9	.85 (.00) N=9								
Safané 39	.94 (.00) N=9	.72 (.03) N=9	.75 (.02) N=9	.98 (.00) N=9	.92 (.00) N=9	.98 (.00) N=10							
Dano 9	.86 (.03) N=6	.92 (.01) N=6	.55 (.26) N=6	.92 (.01) N=6	.63 (.18) N=6	.95 (.00) N=6	.97 (.00) N=6						
Diébougou 12	.54 (.27) N=6	.52 (.29) N=6	.69 (.13) N=6	.58 (.23) N=6	.63 (.18) N=6	.48 (.33) N=6	.48 (.34) N=6	.39 (.44) N=6					
Batié 5	.81 (.03) N=7	.56 (.19) N=7	.55 (.20) N=7	.77 (.04) N=7	.78 (.04) N=7	.90 (.01) N=7	.86 (.01) N=7	.37 (.47) N=6	.36 (.48) N=6				
Dissin 13	.80 (.06) N=6	.61 (.20) N=6	.72 (.11) N=6	.82 (.05) N=6	.79 (.06) N=6	.90 (.01) N=6	.86 (.03) N=6	.58 (.30) N=5	.56 (.33) N=5	.92 (.01) N=6			
Tougouri 50	.51 (.31) N=6	.27 (.66) N=5	-.06 (.92) N=5	.59 (.30) N=5	.35 (.49) N=6	.71 (.18) N=5	.73 (.16) N=5	N=3	N=3	N=3	N=2		
Korsimoro 24	.76 (.08) N=6	.74 (.09) N=6	.64 (.17) N=6	.59 (.22) N=6	.79 (.06) N=6	.37 (.47) N=6	.69 (.13) N=6	.58 (.31) N=5	.54 (.34) N=5	.28 (.65) N=5	-.07 (.91) N=5	.62 (.57) N=3	

TABLE H.1 (con't.)

	Dédougou 1	Tougan 49	Nouna 34	Djibasso 14	Solenzo 42	Tchériba 44	Safané 39	Dano 9	Diébougou 12	Batié 5	Dissin 13	Tougouri 50	Korsimoro 24
N'Dorola 33	.07 (.88) N=7	.56 (.25) N=6	.15 (.78) N=6	.36 (.46) N=6	-.07 (.88) N=7	.20 (.71) N=6	.54 (.26) N=6	.25 (.68) N=5	-.41 (.50) N=5	.40 (.51) N=5	-.29 (.71) N=4	.18 (.82) N=4	.72 (.17) N=5
Aribinda 2	.83 (.01) N=8	.83 (.01) N=7	.84 (.02) N=7	.81 (.03) N=7	.79 (.02) N=8	.55 (.20) N=7	.79 (.04) N=7	.68 (.21) N=5	.48 (.41) N=5	.47 (.43) N=5	.01 (.99) N=4	.22 (.68) N=4	.94 (.02) N=5
Dori 16	.48 (.33) N=6	.36 (.55) N=5	.54 (.35) N=5	.20 (.74) N=5	.62 (.19) N=6	-.50 (.39) N=5	.18 (.78) N=5	.18 (.82) N=4	.39 (.61) N=4	.95 (.05) N=4	N=3	-.58 (.42) N=4	.68 (.32) N=4
Sebba 41	.81 (.03) N=7	.89 (.02) N=6	.74 (.09) N=6	.46 (.35) N=6	.74 (.06) N=7	.10 (.85) N=6	.43 (.39) N=6	.10 (.90) N=4	.40 (.60) N=4	.92 (.08) N=4	N=3	.01 (.99) N=5	.95 (.05) N=4
Djibo 15	-.58 (.30) N=5	-.45 (.55) N=4	-.33 (.67) N=4	-.67 (.33) N=4	-.46 (.44) N=5	3 (.42) N=4	-.60 (.40) N=4	N=2	N=2	N=2	N=1	-.76 (.24) N=4	N=2
Koudougou 25	N=3	N=3	N=3	N=3	N=3	.21 (.79) N=4	.17 (.83) N=4	N=2	N=2	N=3	N=3	N=1	N=2
Koupéla 28	.04 (.93) N=7	-.01 (.99) N=6	.08 (.88) N=6	-.05 (.93) N=6	.18 (.70) N=7	-.15 (.78) N=6	.08 (.88) N=6	-.46 (.54) N=4	-.72 (.28) N=4	.97 (.03) N=4	N=3	-.02 (.97) N=5	.58 (.42) N=4
Tenkodogo 46	-.09 (.86) N=7	.46 (.35) N=6	-.19 (.72) N=6	.13 (.81) N=5	-.26 (.57) N=7	.07 (.90) N=6	.21 (.69) N=6	.65 (.35) N=4	-.22 (.78) N=4	-.32 (.68) N=4	N=3	.22 (.73) N=5	.18 (.82) N=4
Zorgo 54	N=3	N=2	N=2	N=2	N=3	N=2	N=2	N=2	N=2	N=2	N=2	N=2	N=2
Garango 18	.20 (.71) N=6	.72 (.17) N=5	-.15 (.81) N=5	.21 (.73) N=5	-.21 (.68) N=6	.10 (.88) N=5	.25 (.69) N=5	N=3	N=3	N=3	N=2	.33 (.59) N=5	N=3
Zabré 51	.14 (.80) N=6	.11 (.86) N=5	.02 (.97) N=5	.48 (.41) N=5	.16 (.77) N=6	.62 (.27) N=5	.53 (.36) N=5	.44 (.56) N=4	-.85 (.15) N=4	-.71 (.29) N=4	N=3	.52 (.48) N=4	N=3
Ouaga Mean 105	.17 (.65) N=9	.51 (.20) N=8	.26 (.26) N=8	.20 (.63) N=8	.08 (.84) N=9	-.01 (.98) N=9	.13 (.75) N=9	.87 (.02) N=6	.56 (.24) N=6	-.27 (.57) N=7	-.04 (.95) N=6	.54 (.35) N=5	.45 (.37) N=6
Bobo Mean 200	.57 (.09) N=10	.81 (.01) N=9	.60 (.86) N=9	.53 (.14) N=9	.48 (.17) N=10	.67 (.03) N=10	.74 (.01) N=10	.79 (.06) N=6	.75 (.09) N=6	.20 (.67) N=7	.32 (.54) N=6	.28 (.59) N=6	.79 (.06) N=6

TABLE H.1 (con't.)

	N'Dorola 33	Aribinda 2	Dori 16	Sebba 41	Djibo 15	Koudougou 25	Koupéla 28	Tenkodogo 46	Zorgo 54	Garango 18	Zabré 51	Ouaga Mean 100	Bobo Mean 200
N'Dorola 33													
Aribinda 2	.58 (.23) N=6												
Dori 16	-.10 (.85) N=6	.58 (.22) N=6											
Sebba 41	.33 (.52) N=6	.88 (.01) N=7	.69 (.13) N=6										
Djibo 15	-.38 (.62) N=4	-.39 (.52) N=5	1.0 (.00) N=4	.06 (.92) N=5									
Koudougou 25	N=2	N=2	N=2	N=2	N=0								
Koupéla 28	.80 (.11) N=5	.45 (.31) N=7	.51 (.38) N=5	.72 (.10) N=6	.08 (.89) N=5	N=1							
Tenkodogo 46	.90 (.04) N=5	.38 (.39) N=7	-.48 (.41) N=5	.04 (.93) N=6	-.52 (.37) N=5	N=1	.34 (.45) N=7						
Zorgo 54	N=2	N=3	N=2	N=2	N=1	N=1	N=3	N=3					
Garango 18	.80 (.20) N=4	.40 (.44) N=6	-.89 (.11) N=4	-.06 (.93) N=5	-.92 (.08) N=4	N=1	-.14 (.79) N=6	.81 (.05) N=6	N=3				
Zabré 51	-.09 (.91) N=4	.56 (.32) N=5	N=3	-.50 (.50) N=4	N=3	N=1	-.15 (.80) N=5	.74 (.16) N=5	N=3	.79 (.11) N=5			
Ouaga Mean 100	.29 (.52) N=7	.83 (.02) N=7	.08 (.88) N=6	.67 (.14) N=6	-.76 (.24) N=4	.75 (.25) N=4	.04 (.94) N=6	.61 (.20) N=5	N=3	.86 (.06) N=5	.00 (1.0) N=5		
Bobo Mean 200	.46 (.30) N=7	.88 (.00) N=8	.34 (.50) N=6	.77 (.04) N=7	-.48 (.41) N=5	.50 (.50) N=4	.34 (.45) N=7	.75 (.05) N=7	N=3	.83 (.04) N=6	.15 (.78) N=6	.55 (.07) N=12	

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TABLE H.2

CORRELATION COEFFICIENTS FOR
DETRENDED WHITE SORGHUM PRICES FOR A TIME

	Ouahigouya 35	Boulsa 6	Tougouri 50	Pissila 36	Bousouma 7	Mane 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Tikaré 48	Sabsé 38	N'Dorola 33	Soumoussa 43	Baré 3	Gassan 19
Ouahigouya 35															
Boulsa 6	.26 (.54) N=8														
Tougouri 50	-.33 (.43) N=8	.58 (.34) N=13													
Pissila 36	.07 (.87) N=8	-.05 (.87) N=12	.17 (.55) N=15												
Bousouma 7	-.35 (.43) N=4	.64 (.17) N=6	.73 (.10) N=6	-.56 (.32) N=5											
Mané 30	.49 (.26) N=7	.71 (.05) N=8	.72 (.05) N=8	.57 (.18) N=7	.52 (.37) N=5										
Barsalogo 4	-.65 (.12) N=7	.49 (.15) N=10	.71 (.02) N=10	.00 (.99) N=9	.67 (.15) N=6	.49 (.27) N=7									
Korsimoro 24	-.09 (.89) N=5	.54 (.11) N=10	.24 (.43) N=13	-.19 (.55) N=12	.87 (.03) N=6	.46 (.36) N=6	.18 (.70) N=7								
Kongoussi 23	N=3	.43 (.40) N=6	.74 (.02) N=9	.63 (.07) N=9	N=2	N=3	.97 (.03) N=4	-.37 (.36) N=8							
Tikaré 48	.30 (.51) N=7	.51 (.13) N=10	.50 (.10) N=12	-.45 (.14) N=12	.95 (.05) N=4	.17 (.75) N=6	.26 (.54) N=8	.57 (.11) N=9	.77 (.07) N=5						
Sabsé 38	N=0	N=2	-.83 (.20) N=4	-.80 (.20) N=4	N=0	N=0	N=0	.43 (.57) N=4	-.91 (.09) N=4	N=2					
N'Dorola 33	.70 (.12) N=6	.85 (.02) N=7	.28 (.54) N=7	-.36 (.43) N=7	.56 (.33) N=5	.07 (.90) N=6	.60 (.15) N=7	.56 (.33) N=5	N=3	.64 (.17) N=6	N=0				
Soumoussa 43	.39 (.51) N=5	.64 (.25) N=5	.22 (.72) N=5	.71 (.18) N=5	N=1	.23 .77 N=4	.34 (.66) N=4	N=2	N=1	.10 (.00) N=5	N=0	N=3			
Baré 3	-.08 (.88) N=6	.90 (.00) N=8	.83 (.01) N=8	-.32 (.49) N=7	.67 (.22) N=5	.71 (.12) N=6	.73 (.04) N=8	.26 (.67) N=5	N=2	.77 (.07) N=6	N=0	.88 (.02) N=6	.85 (.03) N=6		
Gassan 19	.51 (.49) N=4	.70 (.19) N=5	.38 (.52) N=5	-.65 (.24) N=5	N=3	N=3	.14 (.82) N=5	N=3	N=1	.91 (.03) N=5	N=0	.86 (.14) N=4	N=3	.78 (.12) N=5	

TABLE H.2 (con't.)

	Ouahigouya 35	Boulsa 6	Tougouri 50	Pissila 36	Bousouma 7	Mane 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Tikare 45	Sabse 38	N'Dorola 33	Soumusso 43	Baré 3	Gassan 19
Kokologo 22	-.76 (.24) N=4	.58 (.42) N=4	.78 (.22) N=4	.44 (.56) N=4	N=1	N=3	N=3	N=1	N=1	-.36 (.64) N=4	N=0	N=2	.15 (.81) N=5	.52 (.48) N=4	N=2
Léo 29	-.93 (.07) N=4	-.88 (.12) N=4	-.45 (.55) N=4	-.83 (.18) N=4	N=1	-.69 (.31) N=4	N=3	N=2	N=1	-.59 (.41) N=4	N=0	N=3	-.33 (.59) N=5	-.33 (.67) N=4	N=1
Koudougou 25	N=2	N=2	N=2	N=2	N=0	N=1	N=2	N=0	N=0	N=2	N=0	N=1	.70 (.31) N=4	.17 (.83) N=4	N=3
Saponé 40	.58 (.17) N=7	.43 (.16) N=12	.51 (.02) N=15	-.01 (.97) N=14	.94 (.00) N=6	.21 (.07) N=7	.15 (.70) N=9	.31 (.31) N=13	.24 (.51) N=10	.20 (.56) N=11	.99 (.01) N=4	.82 (.05) N=7	.72 (.33) N=5	.59 (.12) N=6	.86 (.34) N=5
Dassouri 10	-.40 (.23) N=6	.80 (.00) N=12	.71 (.00) N=14	-.07 (.81) N=13	.83 (.04) N=6	.70 (.05) N=8	.92 (.00) N=10	.52 (.10) N=11	.42 (.31) N=8	.35 (.29) N=11	N=2	.90 (.00) N=7	.49 (.23) N=6	.90 (.00) N=9	.40 (.42) N=6
Boussé 8	N=2	.88 (.05) N=5	.79 (.02) N=8	.90 (.00) N=8	N=1	N=2	N=2	.44 (.28) N=8	.16 (.76) N=6	-.29 (.58) N=6	-.03 (.97) N=4	N=1	N=1	N=1	N=1
Zitenga 53	N=0	N=3	.63 (.18) N=6	.35 (.49) N=6	N=0	N=0	N=1	.50 (.31) N=6	-.22 (.64) N=7	-.85 (.15) N=4	.77 (.23) N=4	N=0	N=0	N=0	N=0
Zinaré 52	N=3	.61 (.20) N=6	-.50 (.09) N=9	-.51 (.17) N=9	-.86 (.34) N=3	N=3	-.46 (.54) N=4	.13 (.73) N=9	-.68 (.05) N=9	-.81 (.05) N=6	.37 (.03) N=4	N=3	N=3	-.13 (.87) N=4	N=2
Pô 37	.36 (.43) N=7	.53 (.15) N=9	.45 (.22) N=9	-.43 (.29) N=8	.17 (.75) N=6	.05 (.90) N=8	.67 (.07) N=8	.29 (.39) N=7	N=3	.71 (.07) N=7	N=0	.77 (.04) N=7	.73 (.16) N=5	.72 (.05) N=8	.34 (.06) N=4
Tiébélé 47	.03 (.96) N=7	.25 (.51) N=9	.50 (.17) N=9	-.65 (.08) N=8	.03 (.96) N=6	.23 (.59) N=8	.53 (.17) N=8	-.05 (.91) N=7	N=3	.80 (.33) N=7	N=0	.22 (.64) N=7	.61 (.19) N=6	.52 (.15) N=7	.74 (.15) N=5
Guéléoungo 21	.33 (.47) N=7	.13 (.75) N=9	.16 (.69) N=9	-.51 (.20) N=8	-.41 (.42) N=6	-.21 (.62) N=8	.35 (.40) N=8	-.54 (.21) N=7	N=3	.94 (.00) N=7	N=0	.37 (.42) N=7	.95 (.00) N=6	.49 (.16) N=9	.95 (.01) N=5
Zorgo 54	.52 (.29) N=6	.80 (.02) N=8	.33 (.43) N=8	-.54 (.21) N=7	-.04 (.94) N=5	.35 (.49) N=6	.15 (.75) N=7	.36 (.48) N=6	N=1	.67 (.10) N=7	N=0	.91 (.03) N=5	.82 (.09) N=5	.75 (.05) N=7	.95 (.01) N=5
Manéga 32	-.25 (.64) N=4	.98 (.02) N=4	.96 (.04) N=4	.90 (.10) N=4	N=1	N=3	N=3	N=2	N=0	.22 (.65) N=4	N=0	N=2	.09 (.94) N=3	N=3	N=3
Zoungou 55	.37 (.45) N=6	.60 (.07) N=10	.09 (.80) N=11	.42 (.23) N=10	-.45 (.55) N=4	.15 (.77) N=6	.25 (.57) N=7	.15 (.69) N=9	-.64 (.17) N=6	.53 (.15) N=9	N=0	.64 (.36) N=4	.63 (.75) N=5	.75 (.09) N=6	.87 (.13) N=4
Ouaga Mean 100	.72 (.00) N=8	.24 (.13) N=9	-.04 (.93) N=9	-.46 (.21) N=9	.57 (.31) N=5	.43 (.34) N=7	-.32 (.44) N=8	.49 (.33) N=6	N=3	.66 (.07) N=8	N=0	.77 (.04) N=7	.59 (.16) N=7	.34 (.38) N=9	.87 (.02) N=6
Bobo Mean 200	-.82 (.01) N=8	.70 (.02) N=10	.40 (.26) N=10	-.25 (.52) N=9	.82 (.05) N=6	.65 (.08) N=8	.02 (.95) N=9	.71 (.07) N=7	N=3	.64 (.09) N=8	N=0	.81 (.03) N=7	.81 (.03) N=7	.52 (.06) N=10	.86 (.03) N=6

TABLE H.2 (con't.)

	Kokologo 22	Léo 29	Koudougou 25	Sapone 40	Dassouri 10	Boussé 3	Zitenga 53	Zintaré 52	Pô 37	Tiébélé 47	Guéléoungo 21	Zorgo 54	Moktédo 32	Zoungou 55	Ouaga Mean 100	Bobo Mean 200
Kokologo 22																
Léo 29	.32 (.58) N=4															
Koudougou 25	N=3	N=2														
Saponé 40	N=3	N=3	N=2													
Dassouri 10	.51 (.49) N=4	1.0 (.01) N=4	N=3	.40 (.12) N=17												
Boussé 3	N=1	N=1	N=0	.66 (.05) N=9	.40 (.33) N=8											
Zitenga 53	N=0	N=0	N=0	.34 (.00) N=8	.05 (.92) N=7	.51 (.19) N=8										
Zintaré 52	N=1	N=2	N=2	.10 (.75) N=12	-.23 (.40) N=11	.49 (.22) N=8	.37 (.00) N=9									
Pô 37	.42 (.58) N=4	.07 (.91) N=5	N=2	.34 (.49) N=8	.64 (.06) N=9	N=2	N=0	-.17 (.83) N=4								
Tiébélé 47	.75 (.25) N=4	-.32 (.50) N=5	N=3	.21 (.58) N=9	.41 (.24) N=10	N=2	N=0	-.40 (.51) N=5	.67 (.03) N=10							
Guéléoungo 21	.44 (.56) N=4	-.25 (.69) N=5	N=3	-.12 (.75) N=9	.24 (.50) N=10	N=2	N=0	.04 (.95) N=5	.50 (.07) N=10	.82 (.00) N=11						
Zorgo 54	.27 (.73) N=4	-.65 (.35) N=4	N=3	.41 (.37) N=7	.50 (.21) N=8	N=2	N=0	N=3	.52 (.01) N=8	.54 (.09) N=8	.57 (.14) N=8					
Moktédo 32	N=3	N=2	N=2	N=3	.92 (.08) N=4	N=2	N=0	N=0	1.0 (.05) N=3	.97 (.16) N=3	.96 (.18) N=3	.77 (.23) N=4				
Zoungou 55	-.35 (.65) N=4	-.74 (.26) N=4	N=3	-.21 (.51) N=12	.44 (.17) N=11	-.63 (.18) N=6	-.24 (.70) N=5	.53 (.07) N=9	.42 (.35) N=7	.17 (.72) N=7	.20 (.51) N=7	.75 (.03) N=8	.57 (.43) N=4			
Ouaga Mean 100	-.50 (.40) N=5	-.33 (.02) N=5	.57 (.33) N=4	.74 (.02) N=9	.06 (.87) N=10	N=2	N=0	.21 (.74) N=5	.55 (.13) N=9	.38 (.28) N=10	.35 (.33) N=10	.30 (.02) N=8	.03 (.97) N=4	.66 (.11) N=7		
Bobo Mean 200	-.22 (.72) N=5	-.76 (.14) N=5	.49 (.51) N=4	.87 (.00) N=10	.38 (.25) N=11	N=2	N=0	.63 (.26) N=5	.30 (.40) N=10	.01 (.97) N=11	-.09 (.80) N=11	.56 (.12) N=9	.15 (.65) N=4	.61 (.11) N=8	.86 (.00) N=12	

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TABLE H.3

CORRELATION COEFFICIENTS FOR
DETRENDED WHITE SORGHUM PRICE FOR A KILOGRAM

	Dédougou 11	Tougan 49	Nouna 34	Djibasso 14	Solenzo 42	Tchériba 44	Safané 39	Dano 9	Diébougou 12	Batié 5	Dissin 13
Dédougou 11											
Tougan 49	.89 (.00) N=9										
Nouna 34	.77 (.01) N=9	.90 (.00) N=9									
Djibasso 14	.83 (.01) N=9	.89 (.00) N=9	.93 (.00) N=9								
Solenzo 42	.88 (.00) N=9	.69 (.04) N=9	.72 (.03) N=9	.77 (.02) N=9							
Tchériba 44	.81 (.01) N=9	.75 (.02) N=9	.79 (.01) N=9	.95 (.00) N=9	.76 (.02) N=9						
Safané 39	.90 (.00) N=9	.79 (.01) N=9	.77 (.02) N=9	.92 (.00) N=9	.89 (.00) N=9	.95 (.00) N=10					
Dano 9	.90 (.01) N=6	.96 (.00) N=6	.90 (.01) N=6	.99 (.00) N=6	.80 (.06) N=6	.98 (.00) N=6	.99 (.00) N=6				
Diébougou 12	.77 (.07) N=6	.8[illegible] (.05) N=6	.83 (.02) N=6	.86 (.03) N=6	.76 (.08) N=6	.85 (.03) N=6	.83 (.04) N=6	.83 (.04) N=6			
Batié 5	.68 (.09) N=7	.31 (.50) N=7	17 (.71) N=7	.38 (.39) N=7	.65 (.11) N=7	.60 (.16) N=7	.67 (.10) N=7	.82 (.05) N=6	.71 (.11) N=6		
Dissin 13	.47 (.34) N=6	.72 (.11) N=6	.86 (.03) N=6	.88 (.02) N=6	.46 (.36) N=6	.83 (.04) N=6	.66 (.16) N=6	.89 (.05) N=5	.85 (.07) N=5	.05 (.92) N=6	

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TABLE H.4

CORRELATION COEFFICIENTS FOR
DETRENDED MILLET PRICES FOR A 100 KILOGRAM SACK

	Dédougou 11	Tougan 49	Nouna 34	Djibasso 14	Kouka 26	Solenzo 42	Tchériba 44	Safané 39	Gaoua 17
Dédougou 11									
Tougan 49	.92 (.00) N=10								
Nouna 34	.95 (.00) N=10	.89 (.00) N=10							
Djibasso 14	.93 (.00) N=8	.80 (.02) N=8	.78 (.02) N=8						
Kouka 26	-.56 (.44) N=4	.36 (.64) N=4	-.22 (.78) N=4	N=3					
Solenzo 42	.97 (.00) N=9	.85 (.00) N=9	.93 (.00) N=9	.88 (.00) N=8	N=3				
Tchériba 44	.90 (.00) N=10	.90 (.00) N=10	.88 (.00) N=10	.98 (.00) N=8	-.67 (.33) N=4	.91 (.00) N=9			
Safané 39	.90 (.00) N=10	.90 (.00) N=10	.88 (.00) N=10	.98 (.00) N=8	-.67 (.33) N=4	.91 (.00) N=9	1.0 (.00) N=10		
Gaoua 17	.44 (.56) N=4	.38 (.62) N=4	.39 (.61) N=4	N=3	N=2	N=3	.12 (.88) N=4	.12 (.88) N=4	

TABLE H.4 (con't.)

	Dédougou 11	Tougan 49	Nouna 34	Djibasso 14	Kouka 26	Solenzo 42	Tchériba 44	Safané 39	Gaoua 17
Dano 9	1.0 (.00) N=4	1.0 (.00) N=4	.71 (.29) N=4	.94 (.06) N=4	N=1	.80 (.20) N=4	.94 (.06) N=4	.94 (.06) N=4	N=2
Diébougou 12	.49 (.40) N=5	.56 (.33) N=5	.53 (.36) N=5	.80 (.20) N=4	N=2	.99 (.01) N=4	.53 (.36) N=5	.53 (.36) N=5	.28 (.72) N=4
Korsimoro 24	.98 (.00) N=6	.96 (.00) N=6	.96 (.00) N=6	.79 (.11) N=5	N=3	.97 (.01) N=5	.53 (.28) N=6	.53 (.28) N=6	.35 (.65) N=4
N'Dorola 33	.73 (.10) N=6	.43 (.39) N=6	.57 (.24) N=6	-.04 (.95) N=5	N=2	.64 (.25) N=5	-.39 (.44) N=6	-.39 (.44) N=6	N=3
Tenkodogo 46	-.80 (.20) N=4	-.77 (.23) N=4	-.77 (.23) N=4	N=3	N=3	N=3	-.45 (.55) N=4	-.45 (.55) N=4	N=3
Garango 18	N=3	-.68 (.53) N=3	N=3	N=2	N=3	N=2	N=3	-.04 (.98) N=3	N=2
Ouaga Mean 100	.44 (.24) N=9	.57 (.11) N=9	.43 (.25) N=9	.26 (.58) N=7	N=3	.37 (.37) N=8	.40 (.29) N=9	.40 (.29) N=9	.83 (.17) N=4
Bobo Mean 200	.36 (.30) N=10	.22 (.55) N=10	.29 (.42) N=10	-.07 (.86) N=8	-.34 (.66) N=4	.15 (.70) N=9	-.02 (.96) N=10	-.02 (.96) N=10	.44 (.56) N=4

TABLE H.4 (con't.)

	Dano 9	Diébougou 12	Korsimoro 24	N'Dorola 33	Tenkodogo 46	Garango 18	Ouaga Mean 100	Bobo Mean 200
Dano 9								
Diébougou 12	N=3							
Korsimoro 24	N=3	.55 (.34) N=5						
N'Dorola 33	N=3	.05 (.95) N=4	.79 (.11) N=5					
Tenkodogo 46	N=2	N=3	-.68 (.32) N=4	.13 (.87) N=4				
Garango 18	N=1	N=2	N=3	N=3	.97 (.03) N=4			
Ouaga Mean 100	.91 (.09) N=4	.72 (.17) N=5	.71 (.12) N=6	.15 (.75) N=7	.63 (.25) N=5	.83 (.17) N=4		
Bobo Mean 200	.61 (.39) N=4	.24 (.69) N=5	.81 (.05) N=6	.89 (.01) N=7	-.26 (.67) N=5	-.44 (.56) N=4	.30 (.34) N=12	

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TABLE H.5

CORRELATION COEFFICIENTS FOR
DETRENDED MILLET PRICES FOR A TINE

	Kouka 26	Ouahigouya 35	Boulsa 6	Tougouri 50	Pissila 36	Bousouma 7	Mané 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Tikaré 48
Kouka 26											
Ouahigouya 35	N=3										
Boulsa 6	.66 (.11) N=7	.04 (.94) N=6									
Tougouri 50	.80 (.03) N=7	-.34 (.51) N=6	.56 (.04) N=13								
Pissila 36	.76 (.08) N=6	-.27 (.60) N=6	.89 (.00) N=12	.68 (.01) N=15							
Bousouma 7	.71 (.07) N=7	.84 (.16) N=4	.78 (.02) N=8	.66 (.07) N=8	.69 (.09) N=7						
Mané 30	.78 (.07) N=6	-.58 (.23) N=6	.72 (.03) N=9	.81 (.01) N=9	.79 (.02) N=8	.85 (.02) N=7					
Barsalogo 4	.43 (.34) N=7	-.88 (.05) N=5	.29 (.41) N=10	.55 (.10) N=10	.65 (.06) N=9	.27 (.52) N=8	.69 (.06) N=8				
Korsimoro 24	.58 (.17) N=7	.92 (.08) N=4	.82 (.00) N=11	.30 (.29) N=14	.75 (.00) N=13	.85 (.01) N=8	.71 (.07) N=7	.30 (.43) N=9			
Kongoussi 23	-.17 (.83) N=4	.74 (.15) N=5	.49 (.22) N=8	-.24 (.48) N=11	.34 (.31) N=11	.96 (.01) N=5	-.11 (.84) N=6	-.21 (.69) N=6	.58 (.08) N=10		
Tikaré 48	.82 (.05) N=6	-.17 (.74) N=6	.70 (.02) N=10	.78 (.01) N=10	.64 (.06) N=9	.97 (.00) N=7	.54 (.17) N=8	.02 (.97) N=8	.88 (.00) N=8	.89 (.04) N=5	

TABLE H.5 (con't.)

	Kouka 26	Ouahigouya 35	Boulsa 6	Tougouri 50	Pissila 36	Bousouma 7	Mané 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Tikaré 48
Ademtenga 1	.81 (.03) N-7	.15 (.78) N-6	.91 (.00) N-12	.53 (.05) N-14	.81 (.00) N-13	.82 (.01) N-8	.51 (.16) N-9	.27 (.45) N-10	.81 (.00) N-12	.69 (.03) N-10	.73 (.03) N-9
Sabsé 38	.62 (.14) N-7	-.87 (.13) N-4	.16 (.66) N-10	.33 (.30) N-12	.25 (.46) N-11	.56 (.14) N-8	.18 (.71) N-7	.17 (.70) N-8	.30 (.35) N-12	-.14 (.74) N-8	.61 (.12) N-8
N'Dorola 33	.11 (.86) N-5	.88 (.12) N-4	.89 (.01) N-7	.13 (.78) N-7	.77 (.05) N-7	.73 (.10) N-6	.01 (.98) N-6	.00 (1.0) N-6	.85 (.03) N-6	.74 (.15) N-5	.57 (.24) N-6
Soumousso 43	N-1	.12 (.88) N-4	N-3	N-3	N-3	N-2	N-3	N-3	N-2	N-2	N-3
Gassan 19	.80 (.20) N-4	N-2	.44 (.56) N-4	.30 (.70) N-4	N-3	.39 (.61) N-4	N-3	.85 (.15) N-4	.76 (.24) N-4	N-1	.56 (.44) N-4
Koumana 27	N-3	.06 (.94) N-4	.71 (.18) N-5	.05 (.95) N-5	.56 (.33) N-5	.92 (.08) N-4	.18 (.77) N-5	-.15 (.82) N-5	.92 (.08) N-4	N-3	.89 (.11) N-4
Kokologo 22	N-1	-.63 (.25) N-5	.97 (.03) N-4	.93 (.67) N-4	.96 (.04) N-4	N-2	.86 (.14) N-4	N-3	N-2	N-3	.78 (.22) N-4
Léo 29	N-2	-.88 (.05) N-5	-.89 (.11) N-4	-.71 (.29) N-4	-.75 (.25) N-4	N-3	-.33 (.67) N-4	N-3	N-3	-.67 (.33) N-4	-.83 (.17) N-4
Koudougou 25	N-0	N-3	N-2	N-2	N-2	N-0	N-2	N-1	N-0	N-1	N-2
Saponé 40	.65 (.12) N-7	.57 (.32) N-5	.55 (.06) N-12	.56 (.03) N-15	.44 (.11) N-14	.86 (.01) N-8	.43 (.29) N-8	.11 (.77) N-10	.64 (.01) N-14	.00 (1.0) N-11	.86 (.00) N-9
Dassouri 10	.96 (.01) N-5	-.06 (.92) N-5	.76 (.01) N-10	.67 (.02) N-12	.85 (.00) N-11	.84 (.04) N-6	.65 (.11) N-7	.43 (.29) N-8	.79 (.01) N-10	.35 (.36) N-9	.84 (.01) N-8

TABLE H.5 (con't.)

	Kouka 26	Ouahigouya 35	Boulsa 6	Tougouri 50	Pissila 36	Bousouma 7	Mané 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Tikaré 48
Boussé 8	N=0	N=0	N=3	.17 (.75) N=6	.34 (.50) N=6	N=0	N=0	N=1	.50 (.31) N=6	-.41 (.42) N=6	N=1
Zitenga 53	N=0	N=0	N=3	.88 (.02) N=6	.86 (.03) N=6	N=0	N=0	N=1	.96 (.00) N=6	.26 (.62) N=6	N=1
Ziniaré 52	N=3	N=3	.60 (.21) N=5	-.52 (.15) N=9	-.32 (.39) N=9	N=3	N=3	-.61 (.39) N=4	.56 (.12) N=9	.29 (.44) N=9	N=3
Pô 37	.52 (.23) N=7	-.70 (.13) N=6	-.08 (.83) N=9	.14 (.73) N=9	.44 (.28) N=8	-.04 (.93) N=8	-.21 (.62) N=8	.39 (.33) N=8	.11 (.80) N=8	-.56 (.25) N=6	.05 (.91) N=8
Tiébélé 47	.70 (.08) N=7	-.69 (.13) N=6	-.02 (.96) N=9	.47 (.20) N=9	.39 (.33) N=8	.04 (.93) N=8	.16 (.70) N=8	.24 (.57) N=8	.05 (.90) N=8	-.74 (.09) N=6	.17 (.69) N=8
Guéléounoo 21	.48 (.27) N=7	-.64 (.12) N=7	-.29 (.81) N=10	.31 (.39) N=10	.46 (.21) N=9	-.20 (.64) N=8	.03 (.85) N=9	30 (.43) N=9	-.22 (.61) N=8	-.79 (.06) N=6	-.04 (.92) N=9
Zorgo 54	.48 (.34) N=6	.70 (.12) N=6	.31 (.36) N=4	.20 (.63) N=8	.36 (.43) N=7	-.17 (.75) N=6	-.25 (.59) N=7	-.62 (.14) N=7	.11 (.84) N=6	.48 (.52) N=4	.26 (.53) N=8
Moktédo 32	N=2	.25 (.63) N=3	.98 (.02) N=4	.94 (.06) N=4	98 (.02) N=4	N=2	.87 (.13) N=4	N=3	N=2	N=2	.51 (.49) N=4
Zoungou 55	.54 (.46) N=4	N=6	.78 (.05) N=6	.44 (.38) N=6	.62 (.23) N=5	.29 (.71) N=4	.18 (.73) N=6	-.14 (.82) N=5	.47 (.53) N=4	.69 (.31) N=4	.41 (.42) N=6
Ouaga Mean 100	.52 (.29) N=6	.77 (.04) N=7	.43 (.25) N=9	-.02 (.97) N=9	.26 (.50) N=9	.42 (.35) N=7	-.41 (.32) N=8	-.65 (.08) N=8	.66 (.11) N=7	.61 (.19) N=6	.43 (.28) N=8
Bobo Mean 200	-.38 (.40) N=7	.61 (.15) N=7	.10 (.78) N=10	-.32 (.37) N=10	.60 (.09) N=[illegible]	-.46 (.25) N=8	-.40 (.28) N=9	-.17 (.67) N=9	-.09 (.83) N=8	.80 (.06) N=6	-.34 (.38) N=9

TABLE H.5 (con't.)

	Ademtenga 1	Sabsé 38	N'Dorola 33	Soumousso 43	Gassan 19	Koumana 27	Kokologo 22	Léo 29	Koudougou 25	Saponé 40	Dassouri 10
Ademtenga 1											
Sabsé 38	.20 (.58) N=10										
N'Dorola 33	.91 (.00) N=7	.27 (.60) N=6									
Soumousso 43	N=3	N=2	N=2								
Gassan 19	.42 (.58) N=4	.81 (.19) N=4	N=3	.77 (.44) N=3							
Koumana 27	.84 (.08) N=5	.79 (.21) N=4	N=3	.96 (.04) N=4	N=3						
Kokologo 22	.80 (.20) N=4	N=2	N=2	N=3	N=1	.64 (.36) N=4					
Léo 29	-.79 (.21) N=4	N=3	N=3	N=3	N=2	-.97 (.17) N=3	-.66 (.34) N=4				
Koudougou 25	N=2	N=0	N=1	N=3	N=2	N=3	N=3	N=2			
Saponé 40	.46 (.12) N=13	.71 (.01) N=12	.68 (.14) N=6	.98 (.02) N=4	.66 (.23) N=5	.91 (.01) N=6	N=3	N=3	N=2		
Dassouri 10	.81 (.00) N=10	.46 (.25) N=8	.85 (.03) N=6	.67 (.33) N=4	.78 (.22) N=4	.85 (.15) N=4	N=3	N=3	N=3	.76 (.00) N=15	

TABLE H.5 (con't.)

	Ademtenga 1	Sabsé 38	N'Dorola 33	Soumousso 43	Gassan 19	Koumana 27	Kokologo 22	Léo 29	Koudougou 25	Saponé 40	Dassouri 10
Boussé 8	.70 (.30) N-4	.14 (.86) N-4	N-0	N-0	N-0	N-0	N-0	N-0	N-0	.61 (.08) N-9	.69 (.05) N-8
Zitenga 53	.79 (.21) N-4	.21 (.79) N-4	N-0	N-0	N-0	N-0	N-0	N-0	N-0	.79 (.02) N-8	.70 (.08) N-7
Ziniaré 52	.58 (.17) N-7	-.04 (.93) N-7	N-3	N-3	N-3	N-3	N-1	N-2	N-2	.42 (.17) N-12	.41 (.21) N-11
Pô 37	-.07 (.85) N-9	.55 (.15) N-8	.17 (.71) N-7	N-3	.33 (.59) N-5	.87 (.05) N-5	.96 (.04) N-4	.49 (.41) N-5	N-2	.11 (.79) N-8	.16 (.73) N-7
Tiébélé 47	-.04 (.92) N-9	.32 (.43) N-8	-.03 (.94) N-7	.98 (.02) N-4	.11 (.83) N-6	.53 (.27) N-6	.81 (.19) N-4	.13 (.83) N-5	N-3	.11 (.77) N-9	.19 (.66) N-8
Guéléoungo 21	-.03 (.93) N-10	.28 (.50) N-8	.08 (.85) N-7	.77 (.23) N-4	.06 (.93) N-5	.56 (.25) N-6	.87 (.05) N-5	.21 (.74) N-5	N-3	-.27 (.48) N-9	.01 (.98) N-8
Zorgo 54	.40 (.32) N-8	.01 (.99) N-6	.81 (.10) N-5	N-3	.20 (.75) N-5	.63 (.37) N-4	.42 (.58) N-4	-.80 (.20) N-4	N-3	.28 (.55) N-7	.38 (.46) N-6
Méktédo 32	.68 (.32) N-4	N-2	N-2	N-1	N-1	N-3		N-2	N-2	.22 (.86) N-3	N-2
Zoungou 55	.92 (.01) N-6	-.21 (.79) N-4	N-3	N-3	N-3	N-3		-.68 (.32) N-4	N-3	.45 (.45) N-5	.73 (.16) N-5
Ouaga Mean 100	.45 (.23) N-9	-.06 (.89) N-7	.74 (.06) N-7	.65 (.23) N-5	.58 (.30) N-5	.66 (.10) N-7		-.85 (.07) N-5	.54 (.46) N-4	.67 (.05) N-9	.51 (.20) N-8
Bobo Mean 200	.20 (.57) N-10	-.21 (.61) N-8	.96 (.00) N-7	.05 (.94) N-5	-.04 (.94) N-6	-.01 (.99) N-7		-.66 (.22) N-5	.72 (.28) N-4	-.28 (.44) N-10	.06 (.86) N-9

TABLE H.5 (con't.)

	Boussé 8	Zitenga 53	Ziniaré 52	Pô 37	Tiébelé 47	Guéléoungo 21	Zorgo 54	Moktédo 32	Zoungou 55	Ouaga Mean 100	Bobo Mean 200
Boussé 8											
Zitenga 53	.28 (.47) N=9										
Ziniaré 52	.39 (.27) N=10	.56 (.12) N=9									
Pô 37	N=0	N=0	.88 (.12) N=4								
Tiébelé 47	N=0	N=0	.55 (.34) N=5	.81 (.00) N=10							
Guéléoungo 21	N=0	N=0	.59 (.41) N=4	.89 (.00) N=10	.94 (.00) N=10						
Zorgo 54	N=0	N=0	N=3	.40 (.32) N=8	.54 (.16) N=8	.39 (.30) N=9					
Moktédo 32	N=0	N=0	N=0	N=3	.97 (.17) N=3	.71 (.29) N=4	.06 (.94) N=4				
Zoungou 55	N=0	N=0	.95 (.20) N=3	.04 (.93) N=6	-.02 (.97) N=6	.11 (.81) N=7	.71 (.07) N=7	N=3			
Ouaga Mean 100	N=0	N=0	-.45 (.45) N=5	.22 (.57) N=9	.26 (.47) N=10	.15 (.69) N=10	.97 (.00) N=8	-.14 (.86) N=4	.72 (.12) N=6		
Bobo Mean 200	N=0	N=0	-.38 (.53) N=5	.18 (.63) N=10	.08 (.82) N=11	.23 (.49) N=11	.52 (.15) N=9	.17 (.83) N=4	.19 (.68) N=7	.58 (.05) N=12	

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TABLE H.6

CORRELATION COEFFICIENTS FOR
DETRENDED CORN PRICES FOR A 100 KILOGRAM SACK

	Dano 9	Diébougou 12	Batié 5	Dissin 13	N'Dorola 33	Markoy 31	Dori 16	Koudougou 25	Ouaga Mean 100	Bobo Mean 200
Dano 9										
Diébougou 12	.76 (.08) N=6									
Batié 5	.66 (.11) N=7	.97 (.00) N=6								
Dissin 13	.18 (.74) N=6	.65 (.16) N=6	.79 (.06) N=6							
N'Dorola 33	-.67 (.22) N=5	-.91 (.09) N=4	-.84 (.08) N=5	-.81 (.19) N=4						
Markoy 31	N=3	N=3	N=3	N=3	N=2					
Dori 16	N=3	N=3	N=3	N=3	N=3	N=3				
Koudougou 25	N=3	N=3	N=3	N=3	N=2	N=3	N=3			
Ouaga Mean 100	.58 (.18) N=7	.69 (.13) N=6	.61 (.15) N=7	.03 (.96) N=6	.24 (.61) N=7	.84 (.16) N=4	.83 (.17) N=4	-.13 (.87) N=4		
Bobo Mean 200	-.42 (.35) N=7	-.61 (.20) N=6	-.50 (.26) N=7	-.68 (.13) N=6	.8[illegible] (.03) N=7	.58 (.42) N=4	.53 (.47) N=4	-.02 (.98) N=4	.11 (.72) N=12	

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TABLE H.7

CORRELATION COEFFICIENTS FOR
DETRENDED CORN PRICES FOR A TINE

	N'Dorola 33	Soumousso 43	Baré 3	Léo 29	Tiébelé 47	Guéléoungo 21	Ouaga Mean 100	Bobo Mean 200
N'Dorola 33								
Soumousso 43	N=3							
Baré 3	-.28 (.65) N=5	.86 (.06) N=5						
Léo 29	N=3	N=3	.44 (.56) N=4					
Tiébelé 47	-.41 (.43) N=6	-.91 (.09) N=4	-.53 (.22) N=7	.23 (.77) N=4				
Guéléoungo 21	-.60 (.15) N=7	.45 (.55) N=4	-.20 (.63) N=8	.96 (.04) N=4	.27 (.44) N=10			
Ouaga Mean 100	-.37 (.41) N=7	.45 (.45) N=5	.40 (.32) N=8	.25 (.76) N=4	.51 (.16) N=9	.27 (.46) N=10		
Bobo Mean 200	.75 (.05) N=7	-.08 (.90) N=5	.28 (.47) N=9	-.84 (.16) N=4	-.27 (.45) N=10	-.67 (.02) N=11	-.02 (.94) N=12	

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TABLE H.8

CORRELATION COEFFICIENTS FOR
DETRENDED CORN PRICES FOR A KILOGRAM

	Dano 9	Diébougou 12	Batié 5	Dissin 13
Dano 9				
Diébougou 12	.82 (.05) N=6			
Batié 5	.79 (.04) N=7	.97 (.00) N=6		
Dissin 13	.61 (.20) N=6	.95 (.00) N=6	.92 (.01) N=6	

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TABLE H.9

CORRELATION COEFFICIENTS FOR
DETRENDED RED SORGHUM PRICES FOR A 100 KILOGRAM SACK

	Gaoua 17	Dano 9	Diébougou 12	Batié 5	Dissin 13	Korsimoro 24	Koupéla 28	Tenkodogo 46	Garango 15	Ouaga Mean 100	Bobo Mean 200
Gaoua 17											
Dano 9	-.79 (.11) N=5										
Diébougou 12	-.16 (.84) N=4	.79 (.06) N=6									
Batié 5	.72 (.17) N=5	.56 (.19) N=7	.82 (.05) N=6								
Dissin 13	-.98 (.02) N=4	.93 (.01) N=6	.86 (.03) N=6	.52 (.29) N=6							
Korsimoro 24	.30 (.63) N=5	-.11 (.89) N=4	-.01 (.99) N=4	-.65 (.35) N=4	.13 (.87) N=4						
Koupéla 28	N=3	N=2	N=2	N=2	N=2	N=3					
Tenkodogo 46	N=3	N=2	N=2	N=2	N=2	N=3	.84 (.16) N=4				
Garango 18	N=3	N=2	N=2	N=2	N=2	N=3	.71 (.29) N=4	.28 (.72) N=4			
Ouaga Mean 100	-.25 (.64) N=6	-.82 (.02) N=7	-.70 (.12) N=6	-.64 (.12) N=7	-.65 (.17) N=6	.03 (.96) N=5	1.0 (.00) N=5	-.92 (.08) N=4	-.50 (.50) N=4		
Bobo Mean 200	N=3	N=2	N=1	N=2	N=1	N=2	N=3	N=2	N=2	.56 (.25) N=6	

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TABLE H.10

CORRELATION COEFFICIENTS FOR
DETRENDED RED SORGHUM PRICES FOR A TIME

	Boulsa 6	Mané 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Ademtenga 1	Sabsé 38	Soumousso 43	Baré 3	Tchlookul 45	Kokologo 22	Saponé 40
Boulsa 6												
Mané 30	.71 (.03) N=9											
Barsalogo 4	.91 (.00) N=8	.67 (.10) N=7										
Korsimoro 24	.63 (.04) N=11	.27 (.56) N=7	.67 (.07) N=8									
Kongoussi 23	.79 (.02) N=8	.65 (.16) N=6	.74 (.15) N=5	.35 (.35) N=9								
Ademtenga 1	.85 (.00) N=12	.54 (.14) N=9	.72 (.04) N=8	.69 (.01) N=12	.75 (.02) N=9							
Sabsé 38	N=3	N=2	N=2	.01 (.99) N=5	-.22 (.78) N=4	.61 (.39) N=4						
Soumousso 43	.65 (.23) N=5	.35 (.56) N=5	N=3	N=3	.95 (.05) N=4	.83 (.08) N=5	N=1					
Baré 3	.86 (.00) N=10	.55 (.13) N=9	.62 (.10) N=8	.71 (.05) N=8	.53 (.28) N=6	.86 (.00) N=10	N=2	.74 (.06) N=7				
Tchlookul 45	.64 (.12) N=7	.59 (.22) N=6	.67 (.22) N=5	.91 (.03) N=5	.41 (.50) N=5	.34 (.45) N=7	N=2	.77 (.07) N=6	.79 (.02) N=8			
Kokologo 22	.86 (.14) N=4	.95 (.06) N=4	N=2	N=2	N=3	.80 (.20) N=4	N=0	.44 (.46) N=5	.07 (.05) N=5	.58 (.30) N=5		
Saponé 40	.65 (.02) N=12	.58 (.13) N=6	.93 (.00) N=8	.51 (.06) N=14	.48 (.19) N=9	.33 (.27) N=13	.31 (.10) N=5	.69 (.19) N=5	.55 (.10) N=10	.82 (.04) N=6	N=3	

TABLE H.10 (con't.)

	Boulsa 6	Mané 30	Barsalogo 4	Korsimoro 24	Kongoussi 23	Ademtenga 1	Sabsé 38	Soumousso 43	Baré 3	Tchiookui 45	Kokologo 22	Saponé 40
Dassouri 10	.82 (.00) N=12	.44 (.24) N=9	.84 (.00) N=8	.56 (.06) N=12	.66 (.05) N=9	.68 (.00) N=12	N=3	.69 (.13) N=6	.84 (.00) N=11	.50 (.25) N=7	.87 (.13) N=4	.61 (.01) N=17
Boussé 8	N=3	N=0	N=0	.25 (.63) N=6	.00 (1.0) N=4	.70 (.26) N=4	N=3	N=0	N=0	N=0	N=0	.66 (.11) N=7
Zitenga 53	N=3	N=0	N=0	.52 (.37) N=5	N=3	N=3	N=3	N=0	N=0	N=0	N=0	.73 (.06) N=7
Zintaré 52	-.70 (.12) N=6	N=3	N=3	.17 (.67) N=9	.14 (.76) N=7	.81 (.03) N=7	.49 (.41) N=5	N=3	-.84 (.07) N=5	N=3	N=1	.35 (.26) N=12
Pô 37	.83 (.00) N=9	.65 (.08) N=8	.60 (.12) N=8	.2 (.18) N=8	.81 (.05) N=6	.86 (.00) N=9	N=2	.84 (.07) N=5	.85 (.00) N=10	.75 (.05) N=7	.55 (.45) N=4	.70 (.05) N=8
Tiébelé 47	.09 (.83) N=8	-.25 (.59) N=7	.23 (.59) N=8	27 (.51) N=8	-.66 (.23) N=5	-.04 (.93) N=5	N=2	.72 (.17) N=5	.27 (.45) N=10	.70 (.12) N=6	N=3	.09 (.82) N=9
Guéléoungo 21	.21 (.60) N=9	.00 (1.0) N=8	.19 (.65) N=8	.09 (.84) N=8	-.09 (.86) N=6	.12 (.76) N=9	N=2	.96 (.00) N=6	.43 (.19) N=11	.88 (.01) N=7	.60 (.40) N=4	.04 (.91) N=9
Zorgo 54	.67 (.07) N=8	.52 (.24) N=7	.59 (.22) N=6	.14 (.80) N=6	.88 (.12) N=4	.52 (.18) N=8	N=2	.91 (.03) N=5	.84 (.00) N=9	.75 (.05) N=7	.59 (.41) N=4	.34 (.46) N=7
Moktédo 32	.99 (.01) N=4	.91 (.09) N=4	N=2	N=3	N=2	.86 (.06) N=5	N=1	N=3	.90 (.10) N=4	N=3	N=3	.28 (.59) N=6
Zoungou 55	.64 (.17) N=6	.44 (.39) N=6	.64 (.36) N=4	-.23 (.77) N=4	.75 (.25) N=4	.85 (.03) N=5	N=2	.72 (.17) N=5	.77 (.04) N=7	.18 (.73) N=6	.48 (.52) N=4	-.28 (.64) N=5
Ouaga Mean 100	.26 (.51) N=9	.15 (.73) N=8	.83 (.02) N=7	N=7	.67 (.15) N=6	-.26 (.50) N=9	N=2	.06 (.90) N=7	.18 (.60) N=11	.60 (.12) N=8	-.51 (.38) N=5	.66 (.05) N=9
Bobo Mean 200	N=2	N=3	N=2	N=2	N=1	N=2	N=1	N=0	N=2	N=1	N=0	N=2

TABLE H.10 (con't.)

	Dassouri 10	Boussé 8	Zitenga 53	Zintaré 52	Pô 37	Tiébelé 47	Guéléoungo 21	Zorgo 54	Hoktédo 32	Zoungou 55	Ouaga Mean 100	Bobo Mean 200
Dassouri 10												
Boussé 8	.76 (.14) N=5											
Zitenga 53	.35 (.57) N=5	.76 (.05) N=7										
Zintaré 52	-.05 (.66) N=10	.79 (.02) N=8	.94 (.00) N=3									
Pô 37	.74 (.02) N=9	N=0	N=0	-.65 (.32) N=4								
Tiébelé 47	.47 (.20) N=9	N=0	N=0	-.91 (.03) N=5	.04 (.91) N=9							
Guéléoungo 21	.54 (.11) N=10	N=0	N=0	-.89 (.04) N=5	.31 (.38) N=10	.92 (.00) N=10						
Zorgo 54	.70 (.05) N=8	N=0	N=0	N=3	.82 (.01) N=8	.79 (.04) N=7	.79 (.02) N=8					
Hoktédo 32	.93 (.01) N=6	N=1	N=2	N=3	N=3	N=2	1.0 (.04) N=3	.88 (.12) N=4				
Zoungou 55	.67 (.14) N=6	N=0	N=0	N=3	.98 (.00) N=6	.05 (.94) N=5	.36 (.49) N=6	.88 (.01) N=7	N=3			
Ouaga Mean 100	-.15 (.69) N=10	N=0	N=0	.72 (.17) N=5	.59 (.10) N=9	.66 (.06) N=9	.76 (.01) N=10	.41 (.32) N=8	-.36 (.64) N=4	-.30 (.56) N=5		
Bobo Mean 200	N=2	N=0	N=0	N=1	N=2	N=2	N=2	N=2	N=1	N=1	N=2	

NOTE: a) Correlation coefficients cannot be calculated because the standard deviation is zero for prices in one of the markets.

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TABLE H.11

CORRELATION COEFFICIENTS FOR
DETRENDED RED SORGHUM PRICES FOR A KILOGRAM

	Gaoua 17	Dano 9	Diébougou 12	Batié 5	Dissin 13
Gaoua 17					
Dano 9	.94 (.02) N=5				
Diébougou 12	.97 (.03) N=4	.45 (.37) N=6			
Batié 5	-.25 (.69) N=5	.02 (.97) N=7	.35 (.50) N=6		
Dissin 13	.97 (.03) N=4	.23 (.66) N=6	.35 (.50) N=6	-.57 (.24) N=6	

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