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STRENGTHENING AGRICULTURAL MARKET INFORMATION SYSTEMS AND SERVICES IN KENYA

VOLUME 2: MAIN REPORT

AGRICULTURAL MARKETING IMPROVEMENT STRATEGIES PROJECT

Under contract to the Agency for International Development, Bureau for Science and Technology, Office of Rural Development
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STRENGTHENING AGRICULTURAL MARKET INFORMATION SYSTEMS AND SERVICES IN KENYA

Prepared for USAID/Kenya by the

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September 1990

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STRENGTHENING AGRICULTURAL MARKET INFORMATION SYSTEMS AND SERVICES IN KENYA

MAIN REPORT

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ANNEXES

GLOSSARY OF TERMS

AA	Agricultural Assistant
AIC	Agricultural Information Centre
ASS	Agricultural Statistics Section
CBS	Central Bureau of Statistics
DAO	District Agricultural Officer
DAEO	District Agricultural Extension Officer
DFMO	District Farm Management Officer
DMO	District Marketing Officer
DPD	Development Planning Division (MoA)
DSO	District Statistical Officer
FAO	Food and Agriculture Organisation
FMD	Farm Management Division (MoA)
GOK	Government of Kenya
GTZ	Gessellschaft fur Technische Zussamenarbeit
KBC	Kenya Broadcasting Corporation
KMDP	Kenya Market Development Program
KShs	Kenya Shillings
IBRD	International Bank for Reconstruction and Development (World Bank)
MIS	Market Information System
MoA	Ministry of Agriculture
MoPND	Ministry of Planning and National Development
MoSM	Ministry of Supplies and Marketing
NCPB	National Cereals and Produce Board
OP	Office of the President
USAID	United States Agency for International Development

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The principal objectives of the AMIS Project are as follows:

- conduct diagnostic studies, using rapid appraisal methods and applied research of marketing system organization and performance, marketing parastatal reorganization and privatization, and agribusiness opportunities in developing countries;

- prescribe and, where suitable, monitor and evaluate the impacts of agricultural marketing policy reform programs;

- recommend pilot innovations in marketing system organization, institutional arrangements, post-harvest handling, marketing, processing and storage technology, and market information services;

- distill significant lessons from USAID, other donor, developing country, and private sector experience in agricultural marketing development projects, programs and policy reform.

This current study, which requires description of existing market information systems in Kenya, diagnosis of key constraints to improved performance, and prescription of a program for improving the usefulness of public market information to both public and private users in Kenya, is consistent with several of AMIS's key objectives. The study team gratefully acknowledges the co-operation of numerous government officials, farmers, marketing agents, and expatriate advisors. Their candid and lively responses to our many questions provide the basis for our findings and recommendations.

1. INTRODUCTION

1.1 Study background

The rationale of the USAID/Government of Kenya funded Kenya Market Development Program (KMDP) centers on the contention that unnecessary cereals transportation and marketing costs can be reduced if policies and laws affecting market structure are changed and road conditions improved. Current laws underpin the government's authority to restrict cereals movement within and between districts.

Under the KMDP, the Government of Kenya will invest in road improvements in six districts of the country and will work with USAID and other donors in revising laws and policies that affect maize, maize products, beans, millet and sorghum marketing. To encourage private traders to increase their cereals marketing, KMDP will support the routine announcement of current and revised cereals marketing policies and laws. In addition, official and actual cereals prices will be announced as will the prices of those horticultural crops that provide an alternative enterprise for cereals producers.

Quite apart from the need for reliable agricultural price information as a necessary complementary investment in securing the efficiency gains envisaged from policy reform and the road construction program, accurate agricultural price series will be required to monitor and evaluate the impact of measures designed to improve marketing efficiency. The likely magnitude of such improvements is particularly important in the current context, where the National Cereals Produce Board (NCPB) is being mandated to undertake cereal market support activities which will require government subvention. Accordingly, central government policy makers need to be assured that the mix of proposed policy changes will result in a net benefit to the economy in general, and cereal sector participants in particular.

Following from the above considerations, KMDP conditionality requires GOK to implement an effective agricultural marketing information system via an agreed plan for increasing the accuracy, timeliness, reliability and usefulness of market price information. This study is intended to assist in meeting these requirements. What follows is the main study report. It is accompanied by an executive summary in a separate volume.

1.2 Scope of work

The study basically calls for a one-year implementation plan for introducing an effective market information system (MIS) for agriculture in Kenya. The full study terms of reference are reproduced in Annex 1.

1.3 Conduct of the study

The study was completed over the period mid-June to mid-September 1990. Findings and recommendations are based on a review of secondary data, together with extensive interviews with government officials engaged in providing MIS, users of services provided, and other interested parties such as donors. A bibliography and list of people interviewed are provided in Annexes 2 and 3 respectively.

1.4 Report structure

The remainder of the study is structured as follows:

- section 2 provides background on the critical potential role of an effective MIS within the current regulatory environment for food staples and the production and marketing characteristics of key commodities;

- section 3 reviews in detail existing agricultural market information systems - both formal and informal - and draws conclusions on the effectiveness of current systems within the wider objectives of the KMDP program;

- section 4 argues the case for an effective MIS in terms of both public and private sector users, together with general observations on the issue of sustainability;

- section 5 sets out the requirements for a user-oriented MIS. Design features discussed include user needs survey, commodity and market coverage, transaction levels, wholesale price collection methods, grades and standards, and the volumes of produce traded;

- section 6 assesses the institutional capacity of CBS and MoA/FMD as a precursor to recommending a strategy for strengthening MIS in Kenyan agriculture;

- section 7 proposes a strategy for an effective MIS, including recommended project support, and delineates project components;

- section 8 sets out an action plan for implementing a strengthened MIS service, including a detailed media dissemination strategy and first-year implementation schedule;

- section 9, finally, details the content of a funded project, its justification, including specific comments on sustainability beyond the proposed project period.

2. THE ROLE OF MIS UNDER KMDP

2.1 The regulatory framework

The marketing system for staple food crops in Kenya - notably maize and beans - is characterised by government intervention. In addition to restrictions on the marketing of maize (officially 80% of marketed maize must be channelled through the National Cereals Produce Board), movement of maize within the country, in general, is severely limited. Currently, movement of more than 10 bags of maize (900 kgs), for any purpose, requires a permit issued by the GOK.

In theory NCPB also has monopoly control over bean marketing, although its actual role in the bean trade is minimal. Movement controls, however, are somewhat stricter for beans than maize; inter-district movement of quantities greater than two bags (180 kgs) requires a permit.

GOK, in collaboration with donor-assisted projects such as the Cereals Sector Reform Programme, is currently reviewing maize and bean marketing controls. Policy formulation requires a reconciliation of often conflicting objectives such as food security, farmer price and income stabilisation, NCPB financial viability, and marketing efficiency improvements.

There is, currently, some pressure on GOK to increase, for the forthcoming season, the number of bags of maize that can be moved without a permit. The logical next step, given lorry carrying capacities, would be 100 bags (9 metric tons).

The timing and magnitude of a change in movement controls is, however, not clear. As a less strategically important crop (although one in which NCPB trades at a profit), the total liberalisation of marketing of beans may be more imminent. Again, timing is uncertain and even if a decision were taken immediately, the leadtime of drafting, ratifying and gazetting enabling legislation would probably be at least 12 months.

Despite, however, questions over the pace of reform, the general direction is inexorably towards greater liberalisation. This trend clearly increases the importance of informal, as opposed to previously gazetted, prices. As NCPB moves more towards undertaking a buyer of last resort role, and switches to an "into-depot" price, accurate recording of prevailing market prices will be essential to ensure successful market stabilisation.

Such considerations, together with arguments concerning the potential for improved market efficiencies and cash crop diversification, underpin the policy objectives of KMDP and the importance, within the program, attached to an effective agricultural marketing information system.

2.2 Key commodity marketing systems

Maize

Maize, a major staple crop in Kenya, is produced throughout the country under a wide range of agro-ecological conditions, by both large and small farmers. Due to the existence of two rainy seasons and the extensive range in agro-ecological conditions, maize is grown and harvested almost year round in some areas. For the nation as a whole, though, the bulk of annual production is harvested over eight months of the year, July through January, in roughly equal amounts each month. Approximately half of total production is consumed on the farm, the other half making its way into the market place. Of that which is marketed, roughly 40% is sold by large commercial farmers.

Officially, maize is considered a "scheduled crop" in Kenya. The prices to be paid to maize producers are fixed once a year by the GOK and all maize marketing is legally restricted to National Cereals Produce Board (NCPB), the national grain marketing parastatal, or to farmers, agents cooperatives or traders that are licensed by the NCPB. Officially, 80% of marketed maize must flow through NCPB, the other 20% may be sold directly to milling companies under permits issued by NCPB.

In practice, however, is it estimated that only half of marketed maize is actually sold through the official marketing channels: the other half is sold clandestinely by private sector entrepreneurs. Moreover, of the amount that is officially marketed, it is estimated that less than 60% flows through NCPB.

NCPB, the dominant participant in the official marketing channel, acquires its maize through a number of means:

- large farmers that generally deliver directly to NCPB depots;
- smaller farmers that sell to an NCPB network of primary buying centers located throughout maize production areas;
- cooperatives that assemble multiple small-scale transactions and deliver to NCPB depots; and,
- licensed buying agents who purchase maize from farmers and deliver to NCPB depots.

In turn, NCPB sells its maize predominantly to a few large milling companies that produce sifted maize meal, and secondarily to wholesalers who operate small-scale "posho" mills or who sell to others that do.

As mentioned above, approximately 50% of marketed maize is sold through informal (unofficial) channels. Of that amount, a large percentage is marketed by small-scale producers who either do not have access to the NCPB system or just prefer to sell clandestinely. A World Bank report produced in 1982 estimated that approximately 70% of all small-scale maize producers market some maize through informal channels. While there is clearly some informal movement of maize from surplus supply areas to major deficit areas across provinces, most informal maize trade takes place within districts, not least due to GOK movement controls.

The scale of traders involved in informal marketing of maize varies significantly, from small itinerant traders with little or no overhead to large-scale lorry traders who move truckloads over long distances. Of the retail traders interviewed, most had only a minimum of overhead and added only a small margin to their purchase price.

Beans

Like maize, dry beans are grown throughout Kenya, under various agro-ecological conditions. In contrast to maize, however, beans are produced almost entirely by small-scale farmers and predominantly for on-farm consumption. Only about 30% of total bean production is marketed.

Officially, beans, like maize, are a "scheduled crop". Official producer prices are fixed annually, and legally NCPB has monopoly control over bean marketing. Similar to maize, NCPB acquires beans through various means:

- larger farmers who deliver to the depots;
- smaller farmers who deliver to NCPB's system of Primary Marketing Centers;
- licensed buying agents who buy from farmers and deliver to NCPB depots; and,
- cooperatives that assemble multiple small-scale transactions and deliver to NCPB depots.

In practice, however, NCPB buys only a small percentage of total annual bean production. For 1988, NCPB's share of total production was estimated at 4%, or roughly 13% of marketed surplus. It has been hypothesized that the high proportion of bean trade handled by the private sector (in relation to maize) may result from the higher per unit value of beans, and thus higher return for clandestine traders, and from the GOK's perception of beans as being of lesser importance in terms of food security. Similarly, it has been observed that it is much more expensive for NCPB to handle and store beans.

In any case, the bean trade is controlled predominantly by private sector participants that, like maize traders, vary substantially in scale of operation. The Agrivet study (see Annex 2) reported that during the field survey, several traders, some of whom could have been farmers, were observed moving maize and beans by donkey, each load being estimated at 50 - 80 kilograms per donkey. On the other end of the scale, large fixed-location wholesalers in major urban centers reportedly hold stocks as large as 20,000 bags (1.8 million kilograms). These traders buy from NCPB as well as lorry traders and sell to other traders/retailers in addition to institutional consumers, such as schools. Much of the bean trade, however, is undertaken directly by the farmers themselves. The Agrivet study reported that, in major open air markets, as much as 60% of sellers were farmers that sold small quantities of beans (30 - 50 kilograms). The relative importance of each type of market participant, however varies by region.

Horticultural crops

In Kenya, a wide range of horticultural products is grown under various scales and schemes of production for domestic and export markets alike. Cabbages, potatoes and tomatoes, for example, are grown by innumerable small scale farmers, under rain-fed conditions and simple irrigation systems. These commodities are produced primarily for home consumption or sale in domestic rural and urban markets. Cut flowers, in contrast, are grown almost entirely on large commercial estates using intensive irrigation systems. Nearly all cut flowers are sold in lucrative markets overseas. Similarly, French beans, mangoes, and pineapples are produced by both very large and very small-scale farmers. These commodities are grown for domestic and export markets and are consumed both fresh and after processing. All in all, the bulk of Kenyan produce is grown for home consumption or for sale to wholesalers at the farm gate or in local markets. Some produce, however, is grown under sophisticated contract farming schemes that are organised by relatively large firms that export fresh produce.

In contrast to maize and bean marketing, the marketing of horticultural crops throughout Kenya is largely unregulated. Specifically, prices of horticultural products are not administered by the government. Movement of horticultural crops throughout Kenya is unrestricted. Perhaps, most importantly, the buying and selling of horticultural crops is undertaken almost entirely by the private sector.* Instead, GOK involvement in horticultural marketing consists primarily of development and distribution of improved seed varieties, provision of domestic and export market information, and the regulation of quality of horticultural exports. As such, the GOK has intentionally adopted the role of a facilitator and coordinator for private sector trade.

Indeed, there is a vibrant domestic trade in horticultural crops across Kenya. Fresh produce grown throughout Kenya and, in particular, Western, Rift Valley, Central and Coast Provinces, are transported to the major urban markets in Nairobi, Mombasa, and Kisumu. In 1986, the Nairobi market alone saw over 80,000 metric tons of fresh produce. Even within more modest-sized rural markets, a wide range of fresh fruits and vegetables produced in a number of provinces are regularly available. Pineapple traders from Thika, for example, quite regularly sell to wholesale and retail buyers in the small weekly market in Nyahururu, roughly 200 kilometres away.

In addition, exports of horticultural crops has grown phenomenally over the last 15 years. The value of horticultural exports has increased roughly 20-fold since 1975. Further, although down slightly in 1989 (to Kenyan Pounds 112,145,900 or roughly US$ 110 million), horticultural crop exports remain an important source of foreign exchange for Kenya. Horticultural crops are the third largest source of foreign exchange among agricultural exports and accounted for over 11.0% of total foreign exchange earnings in 1989, excluding donor transfers.**

Regardless of destination, export or domestic consumption, the scale at which horticultural crops are marketed varies substantially. One small-scale farmer interviewed that cultivated two acres of various horticultural crops along with maize and dairy cows, sold her tomatoes one or two baskets at a time in a local market. At the other end of the spectrum, a larger more progressive farmer who cultivated seven hectares of tree tomatoes, inter-cropped with passion fruit and cabbages, regularly delivered small truck loads to a export processor over 120 kilometres away.

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* The HCDA buys and sells onions on a relatively small scale.
** Economic Survey 1990, CBS.

Most often, farmers sell to wholesalers/traders either at the farm gate or at local wholesale markets. Among those interviewed, the small farmers that lived further away from markets often stated that they had little or no choice but to sell to traders at the farm gate. The traders, in turn, generally assemble multiple purchases and then sell to wholesalers or retailers in either local or distant markets. From informal field interviews, it appears that a large percentage of horticultural trade over longer distances is undertaken by relatively small-scale traders. These traders tended to transport their product by public conveyance (matatus), or by rented or owned pick-up trucks. As such, a common load size was either a pick-up truck load or smaller. Nearly all of the traders interviewed reported that a lack of working capital was a key constraint to growth.

Coordination between producers and traders/wholesalers of horticultural products also varies. Clearly though, the bulk of horticultural produce for the domestic consumption is sold on the spot market, with little or no producer-buyer coordination. It was reported, however, that some traders will arrange purchases with growers prior to harvesting or will visit specific growers on a regular basis. Similarly, it was reported that some traders will establish relationships with buying agents located in production areas. The agents will negotiate with farmers and will assemble multiple purchases to be picked up by traders at pre-arranged times.

In general, though, the degree of producer-buyer coordination is much higher for horticultural products that are exported or processed, such as French beans or tree tomatoes, than for domestically consumed products. Export-quality French beans, for example, are produced under various levels of coordination, ranging from small holder contract farming arrangements in which prices are established prior to planting to more sophisticated arrangements in which buyers provide farmers with seeds and chemicals on credit, and grade the produce in farmers' fields during harvest. Nonetheless, it was reported that the bulk of French beans for export is still purchased on the spot market.

In comparison to the marketing of horticultural products domestically, the number of participants involved in export marketing is relatively small. Similarly, in comparison to domestic traders, these firms are relatively capital intensive and depend on a high degree of coordination with their buyers.

Also, export firms have good information on market conditions, through the bulletins provided by the Horticultural Crop Development Authority (HCDA) and through their own privately developed sources of information. The more successful exporters have developed long-term contractual relationships with a few buyers in perhaps one or two main markets. It was reported that shipping produce to terminal markets on consignment basis is very risky and tends to lose money as often as make money.

In both domestic and export markets, prices for horticultural products can vary significantly from day to day and even from hour to hour. In domestic markets, in particular, where storage facilities are limited and refrigeration is essentially non-existent, the perishability of horticultural products can depress prices significantly toward the end of the day. Similarly, unlike maize, horticultural products are not a staple in the Kenyan diet. Horticultural purchases are largely discretionary and as such demand is relatively income and price elastic. Traders observed that prices for higher value horticultural products such as tomatoes and cauliflower, will tend to decrease toward the end of the month, while those for lower value crops such as sukima wiki (kale) will remain relatively firm. Moreover, the domestic markets for horticultural products can be very thin. As such, just a small change in quantities marketed can affect prices significantly.

It is clear, though, that farmers traders and export firms actively take into account quality when negotiating prices. Export firms, in particular, which can sell only the highest quality produce in foreign markets, closely follow international grading standards when negotiating with sellers. Domestic traders, while not quite as rigorous, will also take into account factors such as size and appearance.

2.3 Implications for market information needs

Several characteristics of maize, bean and horticultural crop production and marketing in Kenya suggest that marketing efficiency could be vastly improved by better market information systems. First, as mentioned in the report by DAI (see Annex 2), the diversity of agro-ecological conditions in Kenya not only requires but lends itself to inter-regional trade. The various combinations of elevation and rainfall make most agricultural products available in some part of the country throughout the year. To fully exploit this asset however, producers, traders and government officials must be aware of prices and general market conditions in demand areas far from the sources of production. As will be discussed further in section 3, at present access and distribution of market information is not uniform.

Secondly, the perishability of horticultural crops and its status as a discretionary purchase can cause significant swings in market prices over short periods of time. These potential swings in prices clearly intensify the already substantial risk undertaken by long distance traders as well as farmers that sell in local markets. Reliable and timely sources of market information can greatly reduce this risk.

Thirdly, at present, most sales of agricultural products in Kenya are made in the spot market. As buyers generally personally inspect each purchase, this process of spot selling not only entails substantial risk, but also imposes significant transaction costs on both the buyer and the seller. Widespread adoption of a system of nationally-accepted grades and standards would allow transactions to be made prior to physical delivery and inspection. This could greatly reduce risk and cost throughout the marketing system. An effective market information system, however, is a precondition for a marketing system to evolve, as such. Finally, it is worth noting that maize and beans, in addition to several horticultural crops such as onions and potatoes, can be graded and standardised.

3. A SURVEY OF EXISTING MARKET INFORMATION SYSTEMS

3.1 Overview of existing and proposed sources of market information

Currently, several units within the Government compile information on prices of agricultural commodities and general market conditions, on a regular basis. The Central Bureau of Statistics within the Ministry of Planning and National Development, and the Farm Management Division within the Ministry of Agriculture both collect information on domestic market conditions. The Horticultural Crop Development Agency, the Kenya Tea Development Authority and the Coffee Board of Kenya compile information on the conditions of export markets. All but one of these units, CBS, collect market information with the primary intent of disseminating it to the general public. Yet, despite the preponderance of formal systems to publicly disseminate market information, farmers and traders of agricultural commodities in Kenya tend to rely almost exclusively on market information provided by their own, more informal, systems.

This section examines the characteristics and performance of formal and informal market information systems and discusses the reasons underlying the decisions of farmers and traders to collect their own information, sometimes at great expense. In addition, two market information systems that have been proposed but are not yet established will be discussed.

3.2 Formal market information systems

Central Bureau of Statistics

The Central Bureau of Statistics (CBS), a department within the Ministry of Planning and National Development, collects retail prices for nine staple and horticultural products in 64 markets on a weekly basis. Markets monitored by the CBS system are considered those most important in the country in terms of volume of trade and influence on neighboring markets. Choice of markets, however, is also influenced by convenience of coverage (ie. location of markets in relation to that of CBS enumerators). As a result of the market coverage criteria, the number of markets monitored varies from district to district. Products monitored by CBS include maize, beans, millet, sorghum, cabbage, potatoes, bananas, tomatoes and sukuma wiki (kale).

Currently, the system functions as a price monitoring system, the primary intention being to provide information to GOK analysts and policy makers. The current performance of the system, however, is inadequate. As will be discussed below, prices collected between 1976 and 1985 are not easily accessible due to equipment difficulties, while prices collected after 1986 are not yet available due to a major bottleneck in the system.*

Development of the retail price collection system

CBS established its current system of collecting retail prices of agricultural and other staple products in 1976 with equipment, training and technical assistance provided by the FAO. Specifically, scales and standard containers for measuring volume were provided to enumerators; training and retraining of enumerators were provided annually; standard forms for recording enumerator observations were developed; a mainframe computer program was written for storage and analysis of the data; institutional capacity for analyzing date was strengthened; and a system for disseminating the results through a monthly Market Information Bulletin was established. While much of the original system has been changed, it is noteworthy that the forms for recording enumerator observations developed with FAO assistance are still in use today.

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* CBS does collect wholesale prices for the same commodities through a survey entitled "Sources and Costs of Market Inflows". Each week, enumerators ask 5 or 6 market sellers for the prices they paid for one of the nine commodities. Thus, prices for each commodity are collected once every nine weeks. Unfortunately, there is no coordination of collection cycles between markets. For example, one market may be collecting prices for potatoes while another is collecting prices for cabbage. As a result of this staggered collection, price series cannot be aggregated across markets nor meaningfully compared. Moreover, this data, which has been collected since 1977, has never been entered into a computer nor analyzed in any way. In addition, CBS has collected prices actually received by farmers through a number of farm level surveys. In the most recent, the Agricultural Production Survey undertaken in 1986-1987, approximately 8,000 - 10,000 farm households were surveyed monthly about the prices they received for a period of approximately 16 months. This data is stored on tape.

The number of markets monitored by CBS has been changed a number of times since 1976. At the system's inception, retail prices were collected in 120 markets. Because of fiscal difficulties, however, the number of markets monitored has been reduced twice, first in 1980 to roughly 80 and again in 1982 to 40. This trend was reversed in 1985, when the number of markets was increased to 56. Coverage was increased again in 1989 to its current level of 64.*

Under the FAO program, CBS also collected wholesale prices of a wide range of horticultural products and cereals in seven major markets on a daily basis. The prices for horticultural products were broadcast twice daily on the Voice of Kenya (VOK) and published daily in two English language newspapers. Wholesale prices for cereals, however, were not made public nor analyzed to any extent.

In 1980, responsibility for publicizing wholesale prices was transferred to the Ministry of Agriculture and Livestock. This system will be discussed in greater detail in the sub-section on the Ministry of Agriculture below.

An overview of the CBS system of collection, processing and dissemination

The CBS system of retail price collection, processing and dissemination is well institutionalized. Prices are collected by general purposes CBS enumerators that are posted throughout Kenya.** Enumerators submit price reports to District Statistical Officers (DSO) who are located at the district headquarters. After cursory edit checks by the DSO (or district-level editing clerks), the original price reports are sent to the Agricultural Statistics Division of CBS in Nairobi by post or public transport. The reports are checked again by editing clerks in Nairobi and then encoded and entered into a microcomputer. A hard copy is then generated from the computer and manually checked by the Head of the Agricultural Statistics Division for data entry errors and general inconsistencies in the data. The hard copy is then submitted to the Director of CBS for a final quality check, at which point the data may be released to other Ministries on request.

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* A list of markets currently monitored by CBS is included in Annex 4.

** The distribution of enumerators is determined primarily by the requirements of Multipurpose Sampling Frame (population-based) that is used extensively in other CBS survey activities.

Collection

The process of retail price collection appears to be relatively standardized across markets. One enumerator is assigned to each market and is responsible for visiting the market once each week on the most important market day of the week. Under the FAO system, enumerators were trained to visit the market three times during the day (morning, noon, and afternoon) and observe at least four or five actual purchases for each product being monitored. After each observed purchase, the enumerators were trained to consult with the buyer and measure the actual weight or volume of the amount purchased.

Each price quote and weight or volume measurement would then be recorded on a standard price reporting form developed by FAO (see Annex 5). In addition to price and size or weight and unit of transaction, enumerators would also report the time of day that each transaction occurred, and the variety, quality (good, average, poor) and availability (abundant, average, scarce, unavailable) of the product. Other variables that can influence price, such as size of fruit, were not recorded. After collection was complete, enumerators would convert each price quote into an equivalent price per kilogram.

However, it has been eight years since the FAO provided any training or supervision of price collection. As might be expected, actual price collection methods have changed substantially from the FAO method. In interviews at the district level, it was commonly reported that rather than observe actual transactions throughout the day, enumerators generally visit the market once each day, during peak market activity, and ask sellers directly for current prices. The enumerators reportedly ask prices from four or five different sellers for each product, each time measuring the weight or volume of the amount for which the price is quoted. The enumerators do use the same form and as such still record information on quality, availability and variety.

The current method of price collection appears to have been widely adopted for two main reasons. First, it involves significantly less time, money and effort. Secondly, there has been substantial turnover in enumerators and DSOs since FAO training ended. In any case, the relevant point is that the current method of collection may add substantially more variability to the quality of the date collected. Under the FAO system, the prices recorded were actual selling prices. Under the current system, it is left to the enumerator to decide

whether the price given is a valid price. Thus, the reliability of the data is based substantially on the experience and motivation of the enumerator. Indeed, while one DSO was certain that his enumerator always received valid selling prices due to the enumerator's long standing relationships with sellers in the market, another DSO was unsure whether prices recorded by his enumerators were valid selling prices, first offer prices or prices contrived solely for the benefit of enumerators. For better and for worse, enumerators are often well known or easily recognized in the market place.

Similarly, as responsibility for training and supervision of enumerators has long since been delegated to the district level, the quality of data collected most likely vary somewhat between districts. All DSOs interviewed stated emphatically that each enumerator does receive some initial training in survey techniques, including price collection. However, actual contents of training and the level of follow-up training appears to vary across districts. One DSO stated that he tries to assemble his enumerators semi-annually to discuss common problems and questions, and possible solutions. Other DSOs have stated that training funds are not available at the district level and that training seminars promised by Nairobi headquarters have not been forthcoming.

The level of supervision of price collection activities (as well as other survey activities) also varies by district. The level of supervision reported by DSOs ranged from no supervision at all to periodic checks of market prices directly by the DSO. At a minimum, weekly price reports from enumerators are generally sent to the District Office where they are checked either by Editing Clerks or the DSO for obvious errors. However, one DSO did state that a market price report from his district was sent directly to Nairobi by the enumerator. In this case, district-level checking was not deemed necessary due to the extensive experience of the enumerator. Also, as the location of the market was actually closer to Nairobi than to the district office, checking at the District level would increase the time delay significantly. Factors that appear to affect the level of supervision by a DSO include the number of markets per district -- and as such the number of markets supervised by a DSO --, the distance between each market and the District Office, the quality of roads linking the markets to the District Office, and the general inclination of the DSO. Perhaps most important, DSOs stated that their ability to supervise enumerators was severely curtailed by their limited fuel allowances which have to be allocated over a number of activities. Supervision from Nairobi also varied by district.

Some DSOs reported no feedback at all, which others reported that Nairobi would call them occasionally to double check a seemingly inaccurate report. Apart from cursory error checking, no processing of data takes place at the district level.

On the positive side, enumerators generally live very close to the markets, all of which are easily accessible by public transport (matatu). Each enumerator is reportedly very familiar with the market of responsibility, often having lived in the area for many years.

It is important to note, however, that retail price collection is just one of many responsibilities of the enumerator. The same enumerator will also participate in a number of other agricultural surveys such as the quarterly crop forecasting survey as well as the census and several other regular and ad hoc non-agricultural surveys., DSOs have stated that price collection activities have been suspended at times in order to complete other surveys.

With regard to educational backgrounds of enumerators and DSOs, there does not appear to be any particular standard that is strictly followed. DSOs stated that no statistical nor agricultural education is required of enumerators; however, a certificate is desired. Similarly, educational backgrounds of DSOs vary substantially, ranging from a general diploma to a BSc in Statistics. It is also worth noting that some DSOs apparently function primarily as administrators and have little or no education in statistics. Likewise, one DSO stated that he had no training in agriculture, that his educational background focussed on population studies and that he would prefer to work on population studies.

Processing

After the data are collected, recorded and generally checked at the district level, the original price report forms are sent to Nairobi via post or bus for processing. It generally takes less than two weeks between collection of prices by the enumerator and receipt of the price reports in Nairobi.

In Nairobi, a somewhat involved process of checking, data entry, rechecking and checking again is undertaken before the data is analysed or made available for release to other Ministries. First, the price reports are checked by editing clerks for obvious errors and omissions. The reports are then encoded and entered into microcomputers using a database program, dBase III. After data entry, the program executes a number of pre-programmed checks for consistency and reasonableness of the data and generates a report of possible errors. The corrected files are then passed to a programmer who combines them into a single working file and checks for possible errors once again. When the programmer is satisfied that the data has been entered correctly, the working file is added to an existing master file.

This process of checking and data entry is performed by a pool of general purpose editing clerks within the Agricultural Statistics Section. Hence, entry of market prices is not done on a fixed regular basis but must be coordinated with other survey activities. Similarly, the programmer that oversees the data entry of market prices, maintains and back-ups the database, and generates any reports, is also responsible for these activities associated with other surveys. As a result, the time lag between receipt of the price reports in Nairobi and the completion of data entry may vary. As of the end of June 1990, the time lag was approximately 6 weeks (i.e. data entry for prices collected in April was just being completed). This time lag also results in part from other institutionally related problems (e.g. high turnover) which will be discussed in greater detail in Section 6.

The processing and analysis of data is also constrained by existing computer capacity. Currently, the Agricultural Statistics Section relies on three IBM XT (8088) machines for entry of data (excepting larger surveys that are entered and analyzed by mainframe). More importantly, all analysis of microcomputer data and report preparation is performed on a single IBM AT type machine (80286) equipped with one 80 megabyte hard drive. All microcomputer data is stored on the hard drive of this single computer and consequently all operations to back-up this data on tape are performed on this machine as well.

Since 1986, dBase III nas been used for entry, storage and documentation of price data.* This program, while adequate for these functions, requires the user to have fairly extensive knowledge of the program to perform any analytical procedures. Further, dBase III clearly does not have the analytical or reporting capabilities of other programs that are designed specifically for statistical analysis such as SPSS or SASS.** Indeed, a separate COBOL program is used to generate a standard market information report.

Prior to release of the data to other Ministries, it must be checked for quality and cleared by the Division Head.*** As of July 1990, however, the Division Head had yet to examine price data collected and entered in the computer since the beginning of 1987. This bottleneck appears to result simply from inadequate institutional capacity. The Division Head is severely overburdened and is in desperate need of additional professional support staff. Indeed, the Division Head is responsible for a wide range of activities including managing the division, analyzing data, overseeing several ongoing survey activities and addressing requests for ad hoc surveys and

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* Prior to 1986, price data were entered into a mainframe computer (IBM 370-135) using a database program (File Processing System or FPS) that was developed with FAO assistance. Those first ten years of price data are reportedly stored on magnetic tape but apparently have not been accessed for some time because of technical difficulties. Nonetheless, it is believed that with some technical assistance the data could be downloaded, albeit with some effort, from the mainframe to microcomputers and thus into a more accessible dBase format. As an aside, FAO technical advisors did transfer the entire ten years of date from the mainframe to a microcomputer at one point. Indeed, CBS does have a print out generated from the dBase files. However, the actual computer diskettes have been misplaced.

** SPSS PC+ has been used very effectively for storage and analysis of market information as well as general survey data in many developing country situations.

*** Any in-house analysis of data that is undertaken for general distribution (e.g. the market information bulletin) must also be checked for quality and cleared by the Director of CBS prior to release.

expansions of existing survey systems. Of these activities, examination of price data, which is not published and essentially is not perceived to be of immediate importance, is perhaps the lowest priority. Institutional pressures are such that ongoing data collection activities is of the most immediate concern, followed by examination of data that is considered of higher priority such as quarterly crop forecasting data. This issue of institutional capacity will be discussed in more detail in section 6.

Access and dissemination

Several government officials and technical advisors have stated that access to CBS retail price data has always been a severe problem. It has been suggested that this lack of access is due to factors such as political sensitivity of the data, the existence of policies that intentionally constrain dissemination of data, or simply proprietary motives by CBS. Yet, it was stated quite unequivocally by CBS officials that no policies exist that would preclude official access to the retail price data. It was also stated that retail price data is not deemed to be of a particularly sensitive nature and that CBS does not have any interest in sitting on the data. Further, CBS officials stated that they clearly recognized that the value of any data was derived from its use and not from its collection.

Whether access to data has been intentionally curtailed by policy or otherwise, is difficult to tell. Clearly, it is hard to decipher actual agenda from stated ones in any situation. In support of the official statement, it is quite possible and appears very likely that what has been perceived as intentional denial of access is more a reflection of CBS's lack of adequate capacity to process the data. As mentioned above, the Division Head has yet to examine data that has been collected since 1986. For our purposes, we will proceed with the assumption that, as officially stated, once price data has been examined for quality, they will be made available on a timely basis upon official request.

Quite apart from the question of intent, the capacity to physically deliver data that has been cleared has never been tested. To be sure, relatively simple functions such as locating the requested data, transferring the data to a diskette and delivering the diskette do take labor time and money, two resources that are currently very scarce in the division.

With regard to regular dissemination, retail prices collected by CBS are currently not published in any form. Soon after inception of the system, however, a Market Information Bulletin was produced on a monthly basis. The bulletins, which were available one week after month's end, were produced in-house on an offset printer and distributed to all Permanent Secretaries, various civil servants, CBS offices at the district level, and the CBS library at Nairobi. The Bulletin was also available for public purchase through the government publications service. Because of fiscal difficulties, however, the frequency of publication was cut back from monthly to quarterly in the mid 1980s and was eliminated altogether in 1988. Although the bulletin's demise was reportedly due to lack of funds for paper, spare parts for printing equipment, and outside setup of printing templates, the institutional inability to check and analyze the data probably also contributed to its demise. Indeed, the last Market Information Bulletin produced, for the fourth quarter of 1986, was not published until 21 months later, in September 1988.

Content of the bulletin included simple tables of weekly retail prices for selected agricultural products by market as well as some graphs comparing the movement of prices different provinces over the period and short descriptions of price trends for selected products. It did not include sophisticated statistical nor policy specific analysis. Clearly, that was not its intention. The bulletin was designed simply to keep policy makers informed of short term price movements throughout the country. Similarly, the frequency and content of the bulletin time was not intended to address the public sector information needs. In any case, the value of these bulletins to any interested party was severely undercut in the latter years by the considerable delay between collection and publication.

Long Term Plan of CBS

CBS management has expressed a strong interest in expanding market coverage so that all districts would be adequately represented. A long term goal of monitoring at least three commodity markets in each district was expressed. In addition, CBS would like to begin monitoring prices of livestock in at least two livestock markets per district. Fulfilling these objectives would bring the number of markets covered to over 200.

Summary

In sum, the CBS system of retail price collection is well institutionalized. The system has been operating now for fourteen years and, as such, the mechanism for collecting and transferring data from the field to Nairobi has become very well defined. Enumerators are located close to markets and most are equipped with the scales and containers necessary to perform the work. The form used to record enumerators' observations is clear, well standardized, and captures much useful information in addition to prices. Moreover, the system has been using the same form since the program began. Thus, one can be sure of some continuity in the data that has been collected.

Perhaps most importantly, as a result of this system, CBS has accumulated a potential gold mine for policy and research analysts: a largely uninterrupted series of weekly retail prices for key staple and horticultural commodities from 1976 to the present in an extensive array of markets. Indeed, as can be seen from the list of markets monitored (see Annex 4), the market coverage is very extensive and quite representative of population distribution. Moreover, it is worth noting that data collected since 1985 are stored in an easily accessible and useable form (dBase). Data collected earlier also appear accessible, albeit with considerably more effort.

Clearly, the value of the existing data to government analysts and policy makers is potentially very high.* The length and coverage of the series make it particularly appropriate for analyzing long term price trends for commodities, effects of policy changes, seasonality of prices, regional price differentials, market correlations, regional and seasonal supply differentials, and perhaps trade flows, and seasonal and regional quality differentials. In addition, CBS retail price data could be used in conjunction with price data collected at other transaction levels (e.g. farm, assembly and wholesale levels) to analyze marketing margins over time and space. As such, this price data could be useful from the extension level to the policy level.

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* It is important to stress that CBS data has relatively little value to private sector users. The transaction level of the data, being retail, and the process of converting prices into standard units (kilograms) does not meet the information needs of farmers nor traders.

Nonetheless, there are significant weaknesses in the CBS system. Most importantly, the processing bottleneck that results primarily from inadequate institutional capacity essentially precludes access to and dissemination of data. As a result, the collection of data has essentially become an end in itself. Clearly, efforts to enhance the system's ability to respond to user needs, such as strengthening institutional capacity for processing, analyzing and disemminating, are desperately needed before the potential value of the system can be realised. Also, the question of access must still be addressed.

Similarly, processing and analysis of data is constrained by inadequate computer facilities. Additional microcomputers could greatly improve the ability of CBS to process data on a timely basis. Likewise, the adoption of an integrated software package that could provide database, analytical and reporting functions would substantially improve both the timeliness and quality of output.

In addition, some questions may be raised about the reliability of data, given the current method of price collection, the limited frequency of training, the lack of standardized training across districts, and the inability of DSOs to adequately supervise price collection activities. This concern is somewhat reduced, though, by the extensive training of enumerators and standardization of collection methods since 1982. In any case, additional training of enumerators and closer supervision by DSOs are crucial in ensuring the integrity of future data collection.

Finally, the usefulness of the data is somewhat undermined by reporting gaps due to operational difficulties as well as changes in market coverage due to fiscal cutbacks. Still, a thorough reassessment of market coverage should be undertaken to ensure against the costly inclusion of redundant markets.

Ministry of Agriculture

The Farm Management Division (FMD) within the MOA collects wholesale prices of green maize and roughly 25 to 30 horticultural crops in ten major markets throughout the country.* Frequency of collection ranges from daily, for larger markets such as Nairobi, to weekly in smaller, periodic markets such as Eldoret. In general, prices are collected in four or five of the ten markets in any one day. The prices for horticultural crop are disseminated to the public on a relatively timely basis via newspapers and radio broadcasts. The performance of the system, however, is inadequate. Fiscal difficulties have undercut the frequency and timeliness of collection and dissemination activities. More importantly, the information that is disemminated is widely perceived by the private sector as unreliable and not particularly useful. Indeed, very few of the farmers and traders interviewed paid any attention to the publicly disseminated prices. Instead, most private sector participants rely entirely on informal sources of market information.

In addition, the FMD collects wholesale and retail prices of roughly 35 to 40 staple and horticultural products in approximately 630 smaller rural and urban markets.** These prices are generally not disseminated to the public nor are systematically added to FMD's MIS database. Currently, the data

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* The range of commodities covered varies by season and by market. Currently, the range of commodities include avocados, bananas (ripe and cooking varieties), brinjals, cabbage, cauliflower, capsicums, carrots, chillies, lemons, lettuce, limes, maize, (green), mangoes, onions (bulb and spring varieties), oranges, passion fruit, papaya, pears, peas, pineapple, potatoes (white and sweet), sukuma wiki (kale), tangerines, and tomatoes. Markets currently covered include Nairobi, Mombasa, Bungoma, Eldoret, Kisumu, Nyeri, Kitale, Kisii, Kakamega and Meru.

** Commodity coverage varies significantly by district and by season. In general, prices are reported for all major horticultural crops, pulses and cereals. The exact number of markets in which these prices are collected is not readily known. Specific market coverage is determined at the division level and is not reported to Nairobi. It was estimated that an average of three markets are monitored in each division on a regular basis.

is used almost exclusively to produce internal periodic marketing reports at the division and district levels. The FMD does intend to use this data in marketing extension activities in the future. Until then, however, only a small portion of the potential value of these data is being exploited.

To avoid confusion, the system for collecting and disseminating wholesale prices will be referred to as the Market Information Service (MIS) while the system of collecting prices for FMD's internal reports and future extension activities will be referred to a the Price Monitoring System (PMS). The two systems, which are very different in terms of collection and reporting procedures and intended function, will be discussed separately.

History of MOA's MIS

As mentioned previously, the MIS within the FMD was established in CBS in 1976 under the FAO Agricultural Market Development Project. In 1980, the MIS was transferred to the MOA, where it was placed under the direction of the Development Planning Division (DPD). Responsibility for the MIS stayed within the DPD for four years and was then transferred to the Extension Services Division. Responsibility for the MIS was transferred once more in 1987, to the newly created FMD, where it remains today.

An overview of MOA market information service

Although constrained by fiscal and operational difficulties, the FMD does have the basic structure of a sound market information service. First, wholesale prices for a wide range of commodities are collected at the district level, where they are checked for accuracy and transmitted the same day to FMD headquarters in Nairobi by telephone or telex.* In Nairobi, the price information is compiled into a single report that is hand delivered to two national newspapers for publication the following day. Also, every Thursday, a report of the week's average prices is delivered to the Agricultural Information Centre (AIC), a media unit within the MOA. With this, AIC produces a 15 minute radio program of market price announcements that is aired on KBC radio over the weekend. In addition, the prices are entered into a microcomputer at FMD Nairobi for possible future analysis.

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* Price collection for the Nairobi market is currently handled by the National Headquarters of the FMD. However, this responsibility is expected to be transferred to the district level shortly.

Collection

In relation to CBS, MOA price collection and reporting procedures are much less standardized. Price collection may be performed by a District Marketing Officer, a Marketing Assistant, or an enumerator, depending on the level of the staffing of the particular district agricultural office. As with CBS, prices are collected through direct questioning of sellers during peak market activity, generally before 7:00am. Reportedly, four or five sellers of each commodity are questioned and then the average is recorded.

The general unit of transaction (e.g. bag, box, basket, crate) is noted, but unlike CBS no formal weighing or measuring of the product is undertaken. Similarly, comments on quality and availability may be, but are not regularly, reported. Also, no standard form is used to record the prices. In one market, average prices were simply written down on a blank sheet of paper. From the district, the information is transmitted to Nairobi by telephone or telex, depending on the equipment availability of the office.

There are several concerns regarding FMD's price collection that should be mentioned. First, as with CBS, the FMD method of collecting prices through direct questioning of sellers raises some concern over the reliability and consistency of the data. As mentioned previously, this method of data collection places a substantial amount of responsibility on the data collector to ensure the reliability of the data. Thus, the level of motivation, experience, training and supervision of the data collector become important determinants of data quality. This concern is underscored by the fact that training and supervision of FMD data collectors are not provided on a regular basis. Indeed, it appears that little, if any, training in price collection is provided. Similarly, it is worth noting that the collection of prices may be one of many activities of the data collector. Consequently, the motivation to ensure that only valid prices are collected varies substantially among data collectors.

Secondly, the frequency of collection and reporting in many markets has been reduced or become very irregular over the last few years. Undoubtedly, this deterioration in collection frequency and regularity has contributed to the user perception of the data as unreliable. One cause for this deterioration is the limited availability of official transport and travel allowances for data collection. Indeed, lack of transport was commonly reported as the predominant constraint to data collection. Similarly, the frequency of reporting to Nairobi has been cut back and even eliminated altogether in some markets because of limited funds available at the district level for communications.

This problem of inadequate operational funds for the MIS is further complicated by the nature of the expenditure process at the district level. The DAO has substantial influence over how the budget is actually spent regardless of the approved budget line item allocations. Hence, DAOs who do not perceive price collection for Nairobi as particularly important can, and apparently do, restrict the use of the telephone for such purposes. Moreover, even if travel allowances are available, the cumbersome and lengthy process of obtaining reimbursement for travel often effectively precludes its use. In addition to funding constraints, the regularity of collection and reporting is often undercut by periodic equipment failure, particularly telephone and telex.

Thirdly, and perhaps most importantly, the content of what is collected is deemed unreliable, misleading or inadequate to be very useful by private sector users. This perception results at least in part from imprecise specification of transaction sizes, levels of quality, and other price differentiating factors. One trader reported that his confidence in the published prices was shattered when he found out the hard way that a "bag" in Nairobi was nearly three times the size of a "bag" in Nyeri. The trader had apparently transported a load to Nairobi in response to the price differential in a daily newspaper market report. However, after taking into account the different bag sizes along with the costs of transportation, the trader found that he would have been much better off by selling in Nyeri. Similarly, size and quality of fruit can have a significant impact on price. Without adequate specification, prices alone can be misleading. Other traders have stated that even for products that are largely homogenous in quality and transaction size, the prices that are published do not accurately reflect the prices in the market.

Processing

Currently, processing of data in Nairobi is limited to compilation and entry into a computer: no analysis is undertaken. First, the information that is transmitted from the various reporting districts is compiled by an enumerator into a standardized daily market report form. The essence of the report is a standard table of prices of the various commodities by market (see Annex 6). The report also includes a page of short and often rather general comments on market conditions. Examples of comments include: "in Meru, all items were in average supply"; "in Nairobi, horticultural crops were plentiful"; and, "the supply of tomatoes in the market was low due to transportation problems and wet weather".

Prices are entered into a computer database frequently, although apparently on a somewhat irregular basis. This task is handled interchangeably by an enumerator and a data entry clerk, the only two people within the FMD that have some knowledge of the database program, Panacea. The computer on which the data is stored is a rather obsolete Digital Microcomputer that is currently not used for purposes other than storage of market price data. It should be noted, however, that exclusive use of the computer by the MIS appears to reflect the limited capabilities of the machine as much as official mandate. Other computer needs within the FMD are met by two newer, quicker, and more flexible IBM XT machines.

As mentioned above, the data has never been analyzed. Indeed, those in the FMD that are familiar with Panacea, have no knowledge of the program's report generation or analytical capabilities. A cursory examination of the program's documentation, however, found that the program is not particularly user-friendly and that the capabilities of the program are rather limited.

The existing MIS database does have some potential to be used for a variety of applications ranging from policy level topics such as policy response analysis to farm management topics such as return to storage or seasonality analysis. The usefulness of the database, however, is undercut by irregularity in reporting and, more fundamentally, by questions raised above regarding reliability.

Dissemination

Copies of the market report are delivered by enumerators directly to two English language newspapers on a daily basis and to the AIC on Thursdays. Enumerators use a general purpose FMD vehicle if one is available but most often resort to public transportation such as a Matatu.*

The two newspapers, The Nation and the Kenya Times, both have nationwide coverage and print portions of the market report the following day free of charge. The extent of what is printed, however, varies significantly between newspapers and also from day to day. The Nation tends to print the prices for Nairobi and Mombasa only and will often have space for only a few of the 25 or so commodities that are covered. Both papers tend to print the general unit of transaction, such as bag or basket, but neither includes the weight equivalent of the unit mentioned in the report. Also, neither newspaper reports any of the general comments on market conditions that accompany the prices. This practice of selectively publishing portions of the market report has undoubtedly contributed to the user perception of the market information as not being particularly reliable or useful.

The AIC, the media unit of the MOA, currently produces two weekly radio programs, one of which includes a report of average market prices for the week.** This program is currently broadcast on KBC radio (previously VOK) on Sunday mornings at 7:30 am. It is presented in Kiswahili and follows a magazine style format in which one or two agricultural topics are discussed each week. Approximately half of the 15 minute program is dedicated to announcements of prices and market

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* Previously, enumerators used a motorcycle to deliver the market reports to newspapers. This mode of transportation was eliminated, however, after a fatal crash of an enumerator last year.

** The FMD compiles a report of weekly average prices for delivery to AIC. Averages are simple averages of prices for the previous five reporting days.

conditions. Each program costs about KSh 14,000 (KSh 6,000 to produce and KSh 8,000 for air time) which is borne entirely by the AIC, not the FMD. Previously, a program that included market information was broadcast on a daily basis at 1.30pm. However, due to fiscal considerations, the frequency of the show was reduced in June of 1989, to its current weekly format.*

As with the newspapers, very few of the farmers and traders interviewed paid any attention to the radio broadcast. In fact, many thought that the program was still aired daily or that the program had been eliminated altogether. Some had no knowledge of the program at all. Those interviewed that had listened to the program in the past suggested that the content, like that of the newspapers, was unreliable or inadequate. From interviews, it was clear that, at most, traders would use this price information as a bench mark. They would always supplement the MIS information with information collected from their own sources.

Price Monitoring System

As mentioned above, the PMS is substantially different from the MIS. Prices are collected less frequently (generally monthly or semi-monthly) in a far greater number of markets (roughly 630) and primarily at the retail level.** The collection process is quite informal and the reporting format is not standardized. Again, these prices are not disseminated nor added to the MIS database. Rather, these prices are incorporated into internal periodic reports at the division and district levels.

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* In 1989, the Voice of Kenya (VOK), the official GOK radio broadcasting service, was reorganized with the intention of introducing financial self-sustainability. As part of this reorganization, the VOK was renamed the Kenya Broadcasting Corporation (KBC) and a system for charging government users for airtime was instituted.

** As some rural assembly markets are monitored under the PMS, some wholesale prices are collected. However, reporting of wholesale prices does not past the district level.

These prices are collected by Agricultural Assistants, or AAs, (previously called Technical Assistants) at the sub-locational level.* Each AA throughout Kenya is responsible for monitoring market prices throughout his/her assigned sub-locations. At the end of each month, AAs submit a report of average prices for their sub-locations to the Agricultural Extension Officer at the Divisional Level (DAEO).

Frequency and method of the actual collection, coverage of commodities, and format of reporting vary considerably by division. In one district, it was reported that AAs visited the markets two or three times during the month and asked a number of sellers for prices each time. In another district, it was reported that AAs did not engage in formal price collection activities, per se, but instead visited the market often enough to keep in touch with the movement of prices throughout the month. In a similar vein, it was reported that AAs "just know" what the average monthly prices are in their respective locations. In more than one division, AAs reported price ranges (maximum and minimum prices) rather than average prices. Most AAs included some comment on the availability of crops and a few included comments on quality.

In any case, it it important to note that AAs are first and foremost crop production specialists whose primary mandate is to provide technical advice to farmers. Price collection is clearly secondary. Further, AAs for the most part do not receive any training or supervision on price collection activities.

After receiving the reports from the various locations, the DAEO aggregates the data to arrive at division-level average prices or, in some cases, division-level price ranges. This information is then incorporated into monthly generic division reports that cover a variety of topics ranging from rainfall statistics to descriptions of current extension activities. These reports are submitted to the District Farm Management Officer (DFMO) on a monthly basis.

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* For administrative and political purposes, Kenya is divided into provinces, which are in turn divided into districts. The districts comprise locations, which in turn comprise sub-locations.

From there, the DFMO, or in some cases the District Marketing Officer (DMO) extracts the price information and incorporates it into quarterly district level marketing reports. Again, the format of reporting varies by district. In some cases, the prices are fully aggregated and presented as district level quarterly average prices. In other cases, prices for each division are not aggregated but are reported separately and by month. In either case, the price information is generally accompanied by short, rather broad comments on market activity in the district over the quarter.

The resultant price information that is derived by this exercise in progressive aggregation has limited value to anyone at the national level: e.g. policy analysts and the private sector. The real value of the data is in its disaggregated form in marketing extension activities. Indeed, in isolated instances, a few AAs with some marketing experience have used simple graphs of prices to demonstrate quite successfully the seasonality of prices. As was mentioned earlier, the FMD Nairobi has expressed a desire to expand such marketing extension activities throughout its AA network. In addition to the value in extension work, division-level prices have potential value to small farmers in price negotiation and selling decisions. Clearly, for small farmers that generally sell to a handful of markets relatively close to the farm, the prices in the next division are more relevant than prices in major urban markets. To be useful in this context, however, the frequency of collection would have to be increased and an effective method for dissemination developed.

Summary

The MOA has the basic structure of a sound market information system. Clearly, the mechanism for collecting, transmitting and disseminating price information to the private sector is in place and does work. However, there are substantial weaknesses in the MOA MIS. Most importantly, the information that is disseminated is generally not perceived by the private sector as reliable nor useful. Indeed, the collection methods, the shortage of regular training and supervision, and the lack of standardization raise questions over the validity of the data. Moreover, the imprecise specification of transaction size and the lack of information on quality and other differentiating factors further undermine the information's usefulness to the private sector.

Also, fiscal constraints have undermined the regularity and frequency of collection and dissemination of price information. Additional operating funds, along with safeguards to ensure that these funds are appropriately spent, are clearly required just to maintain the basic structure of the system.

It should also be noted that the data that is collected by the MIS could potentially be valuable to the policy development process. However, currently the FMD does not have adequate hardware or software nor the human resources capable of undertaking even unsophisticated policy analysis.

In addition, the MOA has the basic structure of a price monitoring system. The price data, which are currently being used almost entirely for internal reporting purposes, have great potential value. However, efforts to standardize the collection and reporting process, and to provide regular training and supervision are needed. Also, for the data's potential value to small farmers to be realized, the frequency of collection must be increased.

Horticultural Crop Development Agency (HCDA)

Previously, the HCDA, a government agency that promotes the development of non-program export crops such as french beans and mangoes, collected prices for selected export crops in wholesale markets in Nairobi and Mombasa. This practice was eliminated, however, after a conflict arose with the MOA over whose prices were more accurate. As such, the HCDA currently restricts itself to the collection and dissemination of prices received in foreign markets.

At present, the HCDA subscribes to two international market news services, one through the International Trade Centre (ITC), a UN agency, and the other through COLEACP, a European-based and funded commodity export promotion agency. Both services provide up-to-date information by telex on prices received for export crops in main foreign markets by country of supply. Also, the level of imports and comments on import qualities and grades are commonly reported. The ITC report is telexed on a daily basis while the COLEACP service is received weekly.

This export price information is disseminated to the public primarily through two bulletin boards, one at the JKI Airport and the other at HCDA headquarters in Nairobi. In addition, prices for selected products in major European markets are passed to the AIC for inclusion in the Sunday radio program mentioned above. The information also goes to the Market Development Division within the HCDA where it is commonly reported over the phone to anyone upon request.

The primary targets of the information are clearly exporters, who use the information to help decide on a daily basis how much to ship and where to ship it. Reportedly, however, some larger farmers that produce export crops are aware of the information and may use it as a basis for negotiation.

ort commodity parastatals

The marketing and export of tea, coffee, and pyrethrum are handled entirely by three parastatal agencies, the Kenya Tea Development Authority (KTDA), the Coffee Board of Kenya (CBK) and the Pyrethrum Board of Kenya (PBK) respectively. Prices paid to growers for these commodities are fixed.* In general, prices are set yearly and are announced through newspapers, bulletins, extension agents, and barazas.

None of the parastatals collect open market prices. Indeed, the informal markets for these commodities are reportedly quite limited. The KDTA and the CBK, however, do prepare reports on the prices they receive in national and regional tea and coffee auctions. This information is regularly reported in The Nation, The Standard and The Kenya Times, generally within two days after the auction. In addition, The Standard publishes, on a weekly basis, simple graphs of coffee and tea prices for the current and previous years. These graphs are accompanied by an explanation on how farmers could use these graphs to get a rough idea of the amount of bonus or lump sum payment to expect at year end.

Clearly, the weekly graphs and the regular dissemination of auctions prices are informative. However, neither is particularly useful in private sector decision making.

National Cereals Produce Board (NCPB)

NCPB, the grain marketing parastatal under the supervision of the Ministry of Supplies and Marketing, is currently considering establishing its own system for collection open market grain prices. NCPD asserts that in order to achieve its current objectives of price stabilization, maintenance of a strategic grain reserve and food security, in general, and to effectively

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* In addition, any operating surplus (revenue in excess of the parastatals' operating costs) at year end is distributed to growers as a lump sum payment.

carry out its routine day-to-day activities, it requires a reliable timely source of open market grain prices on a national level. The information currently collected under the MOA system is perceived as inadequate in terms of coverage, while the information currently collected by CBS is perceived as unobtainable on a timely basis, if at all.

Should the NCPB implement such a plan, it appears unlikely that this price information would be made available to the public for several reasons; price dissemination is clearly not within the mandate of NCPB; perception exists that dissemination of open market prices may undercut NCPB's ability to carry out its mandate; and, dissemination of open market prices that show excessive variation would open NCPB to outside criticism.

Ministry of Supplies and Marketing

In addition, the Ministry of Supplies and Marketing (MoSM), whose major mandate is to supervise and develop policy for the NCPB, is also planning to establish a system for collecting open market grain prices, quite apart from that of NCPB. The MoSM believes that a separate system is necessary to ensure NCPB's accountability, to effectively undertake MoSM's mandate of supervising national food distribution, and to provide reliable information for advising government officials of prospective food shortages.

The MoSM is currently embarking on a plan to establish a district level office in each of the 42 districts over the coming months. Each of the district offices is expected to have approximately six employees, including one enumerator to collect market prices. This will raise the total number of employed by the relatively new ministry from 350 currently to over 600. It appears, though, that the exact process for collecting and reporting of prices has yet to be worked out. For reasons similar to those mentioned above, it seems unlikely that prices collected by the MoSM would be published.

3.3 Informal Market Information Systems*

Traders

As identified in section 2, there is a vibrant trade in both horticultural and staple crops across Kenya. Clearly, though,

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* This section is based entirely on the information collected through informal interviews with farmers and traders. The information, in no means, should be considered statistically significant. Nonetheless, as many responses were quite common, it is felt that some valid generalizations can be made.

traders generally do not transport produce long or even short distances on a whim. Most traders desire some indication of what the selling price will be before they begin to transport or even buy any product. As mentioned previously though, most traders interviewed do not put much faith in the price information provided by the FMD/MOA. Instead, traders interviewed tend to rely on more informal sources of market information.

Those traders that have been in the business for any length of time, invariably have established a solid base of knowledge about the seasonality of price movements and about recurrent trade flows between surplus and deficit areas. For example, most traders (and farmers) know that, while cabbage prices may fluctuate widely, the prices of cabbage and other brassicas tend to be higher in the first six months of the year than in the second half of the year. Similarly, traders observed that prices for higher value crops such as tomatoes, peppers and cauliflower tend to come under pressure toward the end of the month when disposable consumer income starts to run short, whereas the price for sukuma wiki (kale) will stay the same or increase.

In addition, nearly all of the long term traders interviewed had some system for obtaining relatively timely information on current conditions in local and distant markets. Most traders simply visit the local markets constantly and thus keep abreast of market conditions primarily through direct observation. Many traders, especially fixed location wholesalers, follow how prices move during the day and note what the residual is at the end of the day. From that, they are able to derive what they can afford to pay their suppliers, be they farmers or other traders, the following day. From observation, they also derive some idea of the quantity they should buy or even which products to buy. Similarly, traders who buy at the farm gate visit production areas quite regularly. Thus, by direct observation, they are keenly aware of the available supplies of various commodities.

Among the traders interviewed that bought and sold over longer distances, most had access to, and would rely quite heavily on, a telephone. The majority would simply call personal contacts located near markets to get current information. Quite commonly, the contacts that provided the information were either friends or relatives. Hence, traders were fairly well assured that, unlike the published market information, the information provided would be reliable. Again, the use of friends and relatives to relay market information was quite pervasive, almost to the point of where it could be hypothesized that trading patterns are in part influenced by locations of personal contacts.

Traders also depended on other traders to provide information on distant markets or production areas. It was commonly reported that traders, while doing business in the markets, discuss quite informally the prices they paid or received the day before in other markets, and general problems of marketing as well as the observations on basic market conditions. Of course, trust in the reliability of the information provided by a potential competitor could only be established over a long period of time. Consequently, relatively new traders do not have the same access to reliable information as those that had been in the business for some time.

As mentioned in section 2, traders occasionally employ agents located in production areas to negotiate with farmers and to assemble small transactions. As such, traders often relied on agents to provide relatively accurate information on supply conditions and existing prices. Generally, these traders would establish ongoing relationships in which they would buy from an agent on a regular basis. The trader, when picking up one load, would negotiate the arrangement for the next. In some isolated cases, it was reported that arrangements could even be made over the telephone. Again, trust in the reliability of the information provided by an agent could only be established over time.

Farmers

Many of the farmers interviewed, both large and small, stated that they will regularly go to some trouble to find out the "going prices" before they transport or agree to sell their product, and sometimes even before they harvest. Small farmers, who tend to sell in a few local markets or at the farm gate, rely heavily on direct observation of market conditions. Prior to transporting anything, many small farmers will visit the market themselves or will send a son, daughter or spouse with the primary intent of assessing the market. As most small farmers do not have their own transportation but must rely on sometimes infrequent public "matatus", the cost of collecting this information in terms of time and resources can be significant. This cost is increased substantially, of course, for those farmers that live further from markets and off the beaten track.

In addition, some of the small farmers interviewed discussed prices and market conditions with neighboring farmers. Clearly though, this information was secondary: small farmers placed much greater reliance on direct observation. Surprisingly, small farmers stated that they also relied on traders that come to the farm gate to give them prices. Obviously, farmers would not rely entirely on a single trader for accurate prices.

Clearly, though, a few farmers, that were somewhat far from well travelled roads, felt that they had little choice but to sell to any trader that passed. The prevailing market prices were basically irrelevant. Of these farmers, a few appeared to consider their cost of production in their decision of whether to sell or not.

It is worth noting that small farmers tended to recognize the value of selling to traders at the farm gate, in spite of the lower prices they would receive. Indeed, farmers realized that they were in a better position to negotiate at the farm gate: they could easily say "no". In contrast, once farmers transported their produce to the market, they were essentially committed: they knew that they had to sell their produce then and there as it did not pay to transport it back. Perhaps, more importantly, traders apparently recognize the vulnerability in the market place. Indeed, it was reported that a group of small farmers that had rented a truck in order to sell in the distant Nairobi market, was recognized as such by wholesalers in the market. The farmers were apparently offered below market prices that got even lower as the day progressed. Toward the end of the day, the farmers were basically forced to sell their crops to cut their losses. Secondly, in addition to the recognition of the lesser risk involved in selling at the farm gate, small farmers clearly were aware of the time and high cost involved in transporting their produce to the market themselves.

Large farmers lie somewhere in the middle of the information spectrum. Like small farmers, they rely heavily on direct observation of market prices prior to transport, but, like traders, many also use the telephone to get information on more distant markets from friends, relatives or buying agents. At the same time, there is a relatively small number of large farmers that contract directly with large buyers to provide produce throughout the year at a fixed price (e.g. export processors). Consequently, they have little need for current market information. Clearly, once the price has been negotiated for the entire year, short term market conditions become irrelevant.

To sum up, nearly all market participants collect some form of market information. All rely extensively on direct observation while the large farmers and traders may also use telephones to collect current information on more distant markets from friends and relatives. In either case, the user of the information is well assured that the information is reliable. In addition, both traders and farmers may supplement their information on general market conditions through informal discussions with neighbors or potential competitors and perhaps more indirectly, through assimilating information arising out of multiple negotiations.

Several important conclusions can be drawn from these informal interviews. First, nearly all market participants collect some form of market information. For small farmers that (by definition) deal in small transaction sizes, though, the per unit cost of obtaining this information can be vary high, especially for those small farmers that live off the beaten track. Secondly, those small farmers that did not actively collect market information, appeared not to do so because they felt they had few options and basically had to accept the price near to that offered. Thirdly, market participants required market information to be reliable and clearly the information published by the government was not considered reliable. Finally, and perhaps most importantly, distribution and access to information was not uniform. For small farmers, access was clearly difficult and costly. For larger farmers and traders, access to information could be quite variable. Those that had friends or relatives near distant markets clearly had greater access to information than those that did not. Similarly, those traders that had been in the business for some time, and thus had developed working relationships with agents or other traders, clearly had better access to information than traders that were new to the business. In short, markets for staple and horticultural crops in Kenya are by no means transparent.

3.4 Conclusions

In conclusion, the lack of market transparency discussed above suggests that there is substantial justification for the development of a centrally operated market information service that would provide equal access to information on market conditions throughout the country. In addition to contributing to greater equity in the marketing system, a marketing information service could also contribute substantially to improved economic efficiency as supply and demand becomes better coordinated over time and space.

Within the government, there are several formal systems for collecting information on market prices and conditions. Quite clearly, though, there are significant differences in market and commodity coverage, frequency and methods of collection, content and format of reporting, and intended purpose and audience of the information.

Of the seven systems discussed in this chapter (five existing and two proposed), no single system appears capable and appropriate for fulfilling the information needs of both public and private sector users, in line with the objectives of KMDP. Three of the systems, those of HCDA, CBK and KTDA are very effective in what they currently do, but none appear capable nor particularly appropriate for fulfilling the information needs as outlined above. Indeed, none of the information systems under the HCDA, CBK and KTDA are significantly involved in direct collection of market data at present. A system to provide information in line with the KMDP objectives, however, would require extensive collection activities. Similarly, the systems of the KDTA, CBK, and HCDA all have very narrow focuses in terms of users of the information and crop and market coverage. To fulfill the market information needs of many different types of public and private sector users, substantial reorientation of the KTDA, CBK, HCDA systems, along with considerable expansions in crop and market coverage, would be necessary. Finally, and perhaps most importantly, maize and beans are not even remotely related to the mandates of the KDTA, CBK nor HCDA.

In contrast, NCPB and MoSM both have a substantial interest in collecting prices of maize, beans and other cereals. Indeed, it appears that at least one, if not both NCPB and MoSM, will establish its own system for collecting maize and bean prices. However, as mentioned above, it appears unlikely that any price information collected by either NCPB or MoSM will be available for public dissemination.

However, two of the existing systems, CBS and FMD, when considered together, are particularly appropriate and potentially very capable of fulfilling the extensive information needs of KMDP. FMD, through its MIS, already collects and disseminates wholesale price information in major urban markets on a relatively timely basis. Only a slight expansion of commodity and market coverage along with some efforts to generally strengthen and rehabilitate the system would be required to ensure that the information needs of the private sector are fulfilled. Similarly, CBS already collects retail price information on nine horticultural and staple crops (including maize and beans) in 64 markets, roughly half of which are in districts targeted by the KMDP. As a result, CBS has accumulated a database that could be very helpful to government officials and USAID in monitoring the effects of the road

rehabilitation efforts and the policy changes embodied in the KMDP program. Moreover, it is worth stressing that both systems have been operating for over a decade. Hence, the mechanisms for collecting, reporting and disseminating information, although a little rusty, are well in place.

The FMD also has a well established system for collecting market prices in roughly 630 smaller rural and urban markets. With some strengthening and reorientation, the information collected by this system could provide agricultural extension workers with the means to effectively address the very specific market information needs of the small farmer.

4. JUSTIFICATION FOR AN MIS

This section will examine needs of both public and private sector users of market information, ways in which investments in MIS can be sustained, and means of disseminating market information. The discussion will be general and conceptual. Sections 5, 7 and 8 will discuss Kenya's specific MIS needs, as well as a strategy and action plan for meeting these needs.

4.1 Needs of public sector users

MIS are typically designed by the public sector to meet, at least initially, the information requirements of a range of public agencies. Information on prices and, perhaps, marketed volumes, flows and grades of agricultural commodities may be collected to meet the needs of different public agencies as follows:

- Ministry of Planning: retail prices of key agricultural commodities in one or more major urban areas. These prices are used in generating price indices, such as a food price index and a consumer price index, which show inflation rates. To the extent that open market prices are used in valuing agricultural commodities in constructing national income accounts, "farmgate prices" may be derived from retail prices by subtracting estimated marketing margins.

- Ministry of Finance: as above, retail prices of key agricultural commodities are used in generating price indices and an estimate of the rate of inflation.

- Ministry of Agriculture: farmgate and wholesale prices of key agricultural commodities are used in calculating returns (gross or net margins) to alternative crop and livestock enterprises. Enterprise budget results can be used in advising farmers, through extension programs, of the financial viability of different farm enterprises. Collected farmgate or wholesale prices may also indicate the extent to which actual prices paid to farmers reflect official prices. Data on marketed volumes and prices by grade of key commodities show the extent to which private marketing agents comply with publicly legislated grades and standards, and the degree to which grades and standards induce production and marketing of higher grade produce.

- Ministry of Commerce: import/export prices and volumes for agricultural commodities are used in preparing trade statistics and estimating trade surpluses/deficits.

- Parastatal Agencies: if parastatals use licensed buying agents to procure agricultural commodities, such as grains or key export crops, actual farmgate or wholesale prices indicate prices paid to farmers. In cases where parastatals have set reference prices that licensed buying agents are supposed to respect, actual collected prices show the extent to which LBAs comply with procurement price guidelines. Grain marketing parastatals will also use agricultural commodity price, movement, stock and import/export data in assessing the supply and market situation. This information is useful in monitoring the food security situation, particularly in chronic deficit areas, and in guiding parastatal decisions regarding grain purchases and disposal (including stock turnover), shipments between surplus and deficit regions, as well as necessary imports and exports to stabilize prices.

- Agricultural Research Institutes and University Departments: agricultural commodity price, volume/movement and quality data are useful in carrying out numerous economic analyses of returns to farm enterprises, seasonal and secular price trends, the degree of market (spatial) integration, and returns to storing commodities.

Accurate data representative of market conditions in a carefully chosen sample of surplus production zones, deficit rural areas, and urban markets are useful in evaluating the level of returns to farmers and traders, the efficiency and transparency of commodity marketing systems, and the competitiveness of domestic commodity subsystems in relation to international market conditions. In drought-prone African countries, timely and accurate price data for key staple crops can provide "early warning" indicators of impending shortages and food emergency situations.

Accurate commodity price data, coupled with careful analysis and disaggregation of gross marketing margins, are also useful in estimating net returns to marketing agents. More often than not, public officials in African countries view traders as exploitative "middlemen," who produce nothing but capture unduly high returns. There is rarely an appreciation of the time, place, form and possession utilities provided by marketing agents in developing countries, who often work in difficult business environments and face a good deal of official (legal and illicit) harassment. In any country where the rural transport infrastructure is poorly developed and where farmers have limited access to market information, there are some examples of above normal returns to trading activities, especially in the case of traders buying in isolated rural areas from producers who have no alternative market outlets.

Improving market information and rural roads are usually sufficient for increasing marketing system competitiveness and returns to producers, and for eliminating oligopoly rents earned by traders. Despite the well-publicized and frequently alleged instances of trader exploitation of farmers, careful enumeration of marketing costs and risks faced by traders, typically, reveal normal or quite thin net returns to most trading activities.

Another concern of public officials in African countries, although rarely explicitly acknowledged, is the domination of staple food crop marketing by ethnic minorities. Staple crops, particularly grain, receive special attention because of their importance in national food security. Grain prices, especially in urban areas, are a key political variable. When grain prices rise precipitously in urban centers, volatile urban consumers, labor unions and other interest groups are likely to put extreme pressure on political leadership, as recent food riots in Zambia clearly demonstrate. Where ethnic minorities dominate the grain trade, or are perceived to control the trade (whether they actually do or not), their participation in the trade draws accusations and close scrutiny during periods of grain shortages and high prices. Whether ethnic minorities play an important role in agricultural marketing or not, improved market information and analysis of marketing costs and net returns to traders can make marketing systems more transparent and provide an empirical basis for evaluating the extent to which marketing agents earn oligopoly rents.

In addition, well-designed, implemented and supervised marketing information systems can provide empirical data that are useful in public sector decision-making and monitoring of evolving market conditions, especially during periods of policy reform. Since prices are the clearest and strongest signals regarding profitability of alternative enterprises transmitted to farmers, it is of paramount importance for policy-makers to monitor their spatial and temporal variability and price trends. When key policies and regulations affecting commodity subsystems are changed, such as removal of grain movement controls, accurate and timely price data are necessary for monitoring the impact of these reforms on producer incentives, inter-regional and inter-temporal price differentials, estimated returns to traders, and supply/demand conditions in different regions. A good market information system is also a key building block in beginning to develop an empirically based and accurate understanding of the organization and operation of key commodity subsystems. Without this basis, allegations of trader exploitation of producers and consumers are typically anecdotal and often flawed, often politically motivated, unsubstantiated and, hence, counterproductive from the standpoint of developing closer collaboration and trust among public and private agents and the emergence of competitive and efficient marketing systems.

4.2 Needs of private sector users

While the needs of public sector users of market information are multiple and varied, the needs of private sector users are far more limited and focus on planting, buying, selling, transport and storage decisions. Publicly-generated and disseminated market information provides farmers, traders, importers/exporters, warehousing agents and processors with useful background knowledge that is instrumental in making the following types of business decisions:

Farmers:

- which crops to plant, based on past relative prices and returns;
- when to plant (and harvest) in order to receive seasonally higher than normal prices. This will depend in part on the extent to which farmers have sufficient moisture or irrigated land and suitable growing conditions to be able to stagger planting and harvest dates;
- prices at which to sell their produce, based on prevailing prices in wholesale markets and knowledge of key marketing costs such as rural to urban transport;
- where and to whom to sell their produce (at the farmgate, in rural assembly markets or at town wholesale markets).

Traders:

- where to buy agricultural commodities most cheaply (assuming wholesale prices are available for key producing areas);
- where to sell agricultural commodities in order to earn the highest possible return from spatial arbitrage (transportation to another region);
- whether it pays to put crops in storage (based on historical price seasonality) and when to concentrate on buying commodities to put into storage and selling out of storage in order to maximise possible returns.

Processors:

- levels at which to set commodity procurement prices in contracts with growers (based on historical price levels and trends);

- depending on historical inter-annual price variability, decision rules of thumb for allocating crop purchases to farmer contracts and to the spot market. Depending on the processor's tolerance for risk, he will set contract purchases at a level that offsets, in part, the risk of production shortfalls and price hikes on spot markets, yet allows for sufficient flexibility in taking advantage of favourable spot market price movements;

- where to procure supply and locate processing facilities;

- where and to whom to sell processed commodities (based on prices in domestic and international markets).

Importers/exporters:

- where to procure supply domestically for export;

- where to procure supply internationally for import;

- when to procure supply domestically/internationally for export/import based on current price levels and their relationship to historical seasonal trends;

- where and to whom to export, based on international market conditions and price prospects;

- where and to whom to sell imports, based on prices at the point of entry (i.e. port) relative to prices in various upcountry locations, and knowledge of major marketing costs.

It is critically important to note that private agents have their own sources of market information, including participants at the same stage of the marketing system (e.g., other farmers or traders) or at adjacent stages of the system, friends and relatives in production zones or urban centers, transporters, cooperatives and other informants. The more sophisticated importers and exporters may subscribe to an international market news service and receive weekly or daily price/grade quotes for alternative sources of supply or alternative suppliers in key foreign markets.

Private participants in the food system will not make important production and trading decisions solely on the basis of publicly-generated and disseminated market information. Private sources figure far more importantly. Producers, traders and processors will, however, consult public market information services as a second and impartial (i.e., not self-interested) source that provides a useful benchmark in making business decisions, provided the information is presented in an easily understandable and usable format, is timely, accurate and readily accessible.

4.3 Sustaining investments in MIS

Public market information systems in most African countries do not generally provide private users with usable, timely, accurate and accessible information. Hence, they are rarely consulted and do not influence private production and marketing decisions. There are many examples of price data collection efforts in African countries initiated with donor assistance that continue to limp along unsatisfactorily once donor funding is phased out. The more elaborate the market information system with respect to number and location of data collection points, transactions levels and commodities, the less likely it is to function satisfactorily after donor assistance is scaled back. Staff in public agencies such as statistical offices in ministries of agriculture or planning continue to collect at least some of the data, though without adequate supervision or feedback from users. In fact, there may be no real users; rather, data are collected because they always have been collected and in fulfillment of administrative reporting requirements. Given the lack of demand for such market information, it is questionable whether the collection agencies are making a real effort to collect the data or simply reporting whatever they can garner secondhand (in the absence of reliable transport and supervision).

One reason there is typically so little demand for publicly collected market information is that data are collected but never analyzed. Policy-makers do not have the time or are not able to interpret raw price data. Hence, data collection efforts receive low priority and, typically, little operational funding. Without adequate support, such efforts spiral downwards in terms of data coverage, consistency, frequency, quality, accuracy and timeliness. Collection agents go through the motions to satisfy administrative superiors, because "that is the way that things have always been done." But they seldom understand why the market data are collected and their potential utility to public and private users.

In the Kenyan context, it is necessary to revitalize and refocus existing public market information systems and, very importantly, to do straightforward analysis and clear presentation of price and volume data to demonstrate their utility to public users. At the same time, selected information on market conditions, commodity prices in key wholesale markets and special commodity outlook and situation reports need to be widely and effectively disseminated to prospective private users. In the short term, market information disseminated to the private sector will probably not have a major impact on private production and trading decisions. As private agents cross-check public market information against information from private sources, and if they are favorable impressed with its accuracy, timeliness and representativeness, they will increasingly consult public sources. When public market information suggests that market conditions have changed quickly, private agents will verify that these developments have truly taken place with private sources and act accordingly to exploit favorable situations or minimize losses. The public market information will be valuable in that it is national in coverage and may provide more comprehensive information to traders of sudden changes in marketing conditions than partial private sources. In the final analysis, however, public market information will never substitute for private sources of market information. At best, it will be a useful complement.

Given the prevalence of poorly performing market information systems in most African countries, many inspired by well-meaning donors and funded for some time with grant monies, sustainability becomes a critical issue in the design of market information systems. Some analysts make a strong argument for donor funding of MIS operating costs over the medium to long term, given the strategic importance of high quality market information in informing government on agricultural and trade policy and food security issues (see Annex 2, Dembele and Staatz, 1989). This argument is probably valid for resource-poor, low-income countries such as Mali, where a carefully planned and sequentially implemented MIS has received praise from donors, academic analysts and Malian users (see Egg, 1989; Staatz and Dembele, 1990; Steffen, 1990). It is likely to be less valid in a country with higher potential agriculture, a more diversified mix of cash and export crops, and higher incomes such as Kenya. A more defensible strategy is to support the design and implementation of an effective MIS in Kenya through donor-funded technical assistance and operational expenses in the short to medium term, while planning for a sustainable, locally supported MIS in the medium to long term.

Factors affecting sustainability

There is a very real temptation for expatriate analysts and Africans trained in sophisticated techniques of data analysis in the U.S. or Europe to design ambitious data collection and analysis schemes that tend to require:

- highly skill-intensive and scarce analytical resources;
- a high degree of computer literacy among several key processors and users of the data generated by the MIS; and
- significant operational funds for coverage of a broad range of commodities, transactions levels, and markets.*

These types of MIS are rarely if ever sustainable. They represent an ideal towards which donors and African countries should strive, but not the first step in the long process of upgrading public MIS.

Sustainability and MIS users

The issue of sustainability needs to be addressed in the context of MIS users. If donors are considered the key users and they require elaborate MIS for their own monitoring and evaluation purposes, then they should be willing to foot the bill over the long term or fully expect the breadth, accuracy and consistency of market information to fall off after external support is phased out. If the principal users of a MIS are African policy-makers, operating agencies and private participants in the food system, the scope and comprehensiveness of a MIS will necessarily be far more limited.

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* In Senegal, for example, a market price and quantity data collection activity that was initiated in the densely populated Peanut Basin in 1984 covered key staple crops in approximately 40 urban and rural markets. This level of geographically intensive data collection was continued through 1985 but cut back in 1986 to a more manageable 16 markets. Given the relative intra-subregion homogeneity of the 3-4 subregions in the Peanut Basin, a region where farmers produce groundnuts, millet, sometimes sorghum or maize, and sometimes cowpeas, the decision to collect market information in 40 markets was indefensible and not sustainable over the medium term. It should be noted, however, that this MIS was more of a university research program than a market information service responding to public and private sector needs.

Designing a MIS that satifies all three potential users (donors, host country government and domestic private agents) is an intellectual and strategic challenge. Perhaps the compromise solution is to design a base MIS with limited commodity, geographic and transaction level coverage that can be sustained in the long term and to supplement this system with periodic informal and formal single visit formal surveys that are designed to meet donor requirements, funded by donors and not expected to be sustainable, and implemented in the context of donor monitoring and evaluation of policy reform programs.

As an example, the KMDP has a monitoring and evaluation component for rural road improvements in six districts of Kenya. An elaborate single visit formal sample survey of some 180 rural households was designed and implemented by a consultant to USAID in June-July 1990. This survey will generate useful baseline data on farmer production patterns, crop transactions behavior, food expenditures and perceived constraints characterizing rural households in six districts in mid-1990. Such a survey is unlikely to be expanded to all 42 districts in Kenya, nor would the GOK be necessarily interested in the results of the survey in the six "KMDP" districts. The 1990 baseline survey will be updated periodically by return visits to the same or similar groups of farmers to monitor how improved rural access, policy/regulatory reform and better market information affect farm resource allocation, market behavior and incomes.

4.4 Dissemination of market information

A glaring shortcoming in many African countries' MIS is ineffective dissemination. Effective dissemination requires attention to timeliness, timing, format and media.

Timeliness

The value of market information decreases significantly with delays in dissemination. For private users the value of market information declines exponentially with the passage of time. For public users who do not depend upon market information to make commodity trading decisions, the value of information decreases far more slowly as a function of delays in dissemination. Lags in dissemination are acceptable for policy-makers concerned with broad and strategic issues of agricultural and food policy. Development planners typically do not require very recent market information. Public agents in parastatal marketing boards or those charged with closely monitoring food security in chronically deficit regions require recent and timely market information in order to do their jobs effectively, however.

Given the different requirements of different users, market information needs to be disseminated in several formats and by several media for different end users. Market information targetted to private users, particularly traders, needs to be disseminated rapidly, with little analysis and in an easily understandable format. Market information targetted to development planners and policy-makers probably needs to be disseminated only monthly or quarterly, likely via printed reports, and to contain analysis of trends and changes from one period to the next.

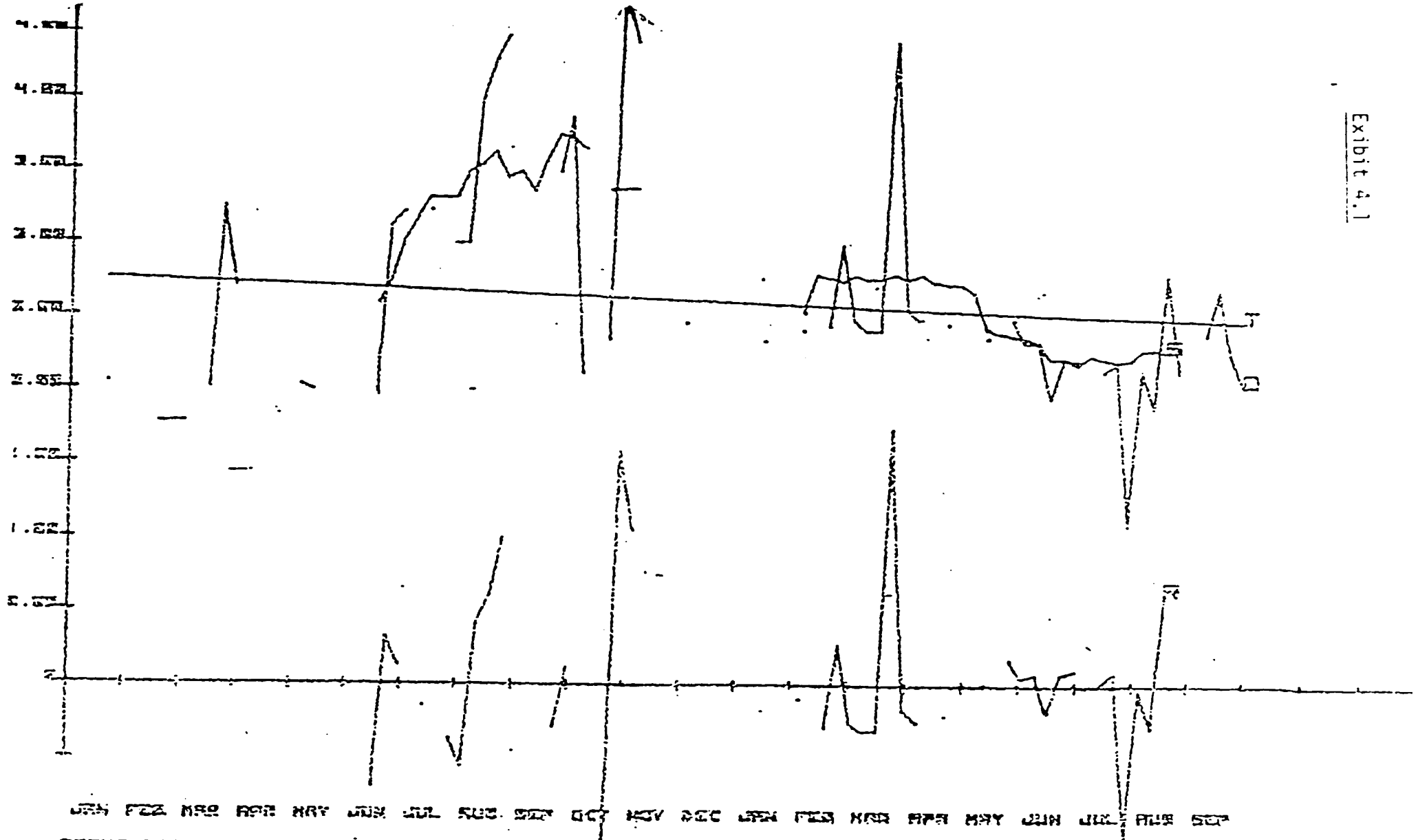
Timing of dissemination

Timing of dissemination applies primarily to private users of market information. Market information disseminated over the radio to private users, for example, needs to be broadcast at times during the day or week when private users are most likely to be able to listen to the radio. Farmers might prefer radio broadcasts of daily or weekly average prices (or the range of prices) and market conditions in key wholesale markets during the evening, after they have completed agricultural tasks. Mid-day broadcasts risk missing producers who are still in the fields or attending rural markets. Wholesale traders would also prefer market reports over the radio either late in the day, after they have finished their trading activities, or perhaps very early in the morning before they attend wholesale markets.

Whatever the timing of dissemination, private agents need to be queried about their preferences during the design of a MIS. In addition, information needs to be disseminated at a consistent hour on the same day. Varying the hour of daily price reports is not recommended, for example.

Dissemination format

This refers to the way in which market information is presented to users. How price data are displayed, whether in week-to-week plots by commodity for a few key markets over several months or in tables reporting weekly means for a wide range of markets, affects how they are interpreted (or if they are correctly interpreted). Exhibit 4.1 from a UNDP/FAO Marketing Development Project report on maize prices provides a good example of how not to present market information. While these data were not prepared for private users, they are far from optimally presented for public users. Note that weeks are numbered without reference to month. In addition, weeks for which no price data were collected receive a 0.0 entry, rather than a not available (NA) designation. Other than a two-page description



BEANS PRICES IN CBS SAMPLE MARKETS 1977 AND 1978 (SEPT), MARKET: KIBOSH (RW/RF-NO.: 35/ 48)

O = ORIGINAL SERIES, T = TREND, S = SEASON (13-M-MAV), R = RESIDUALS

TREND: Y = 2.75-0.0033X, SEASONALITY INDEX: 21.11%, INSTABILITY INDEX: 24.77%

of how statistics were calculated and generally what they mean at the beginning of the report, individual tables are not interpreted. The critical reader would probably ask what the listings of prices and data plots are supposed to mean and how the presented information can be related to GOK agricultural policy or program concerns. To be fair to the UNDP/FAO Marketing Project, it is important to note that its tables and plots were generated by a less-than-user-friendly mainframe computer without the capabilities of currently available graphics packages for micro-computers.

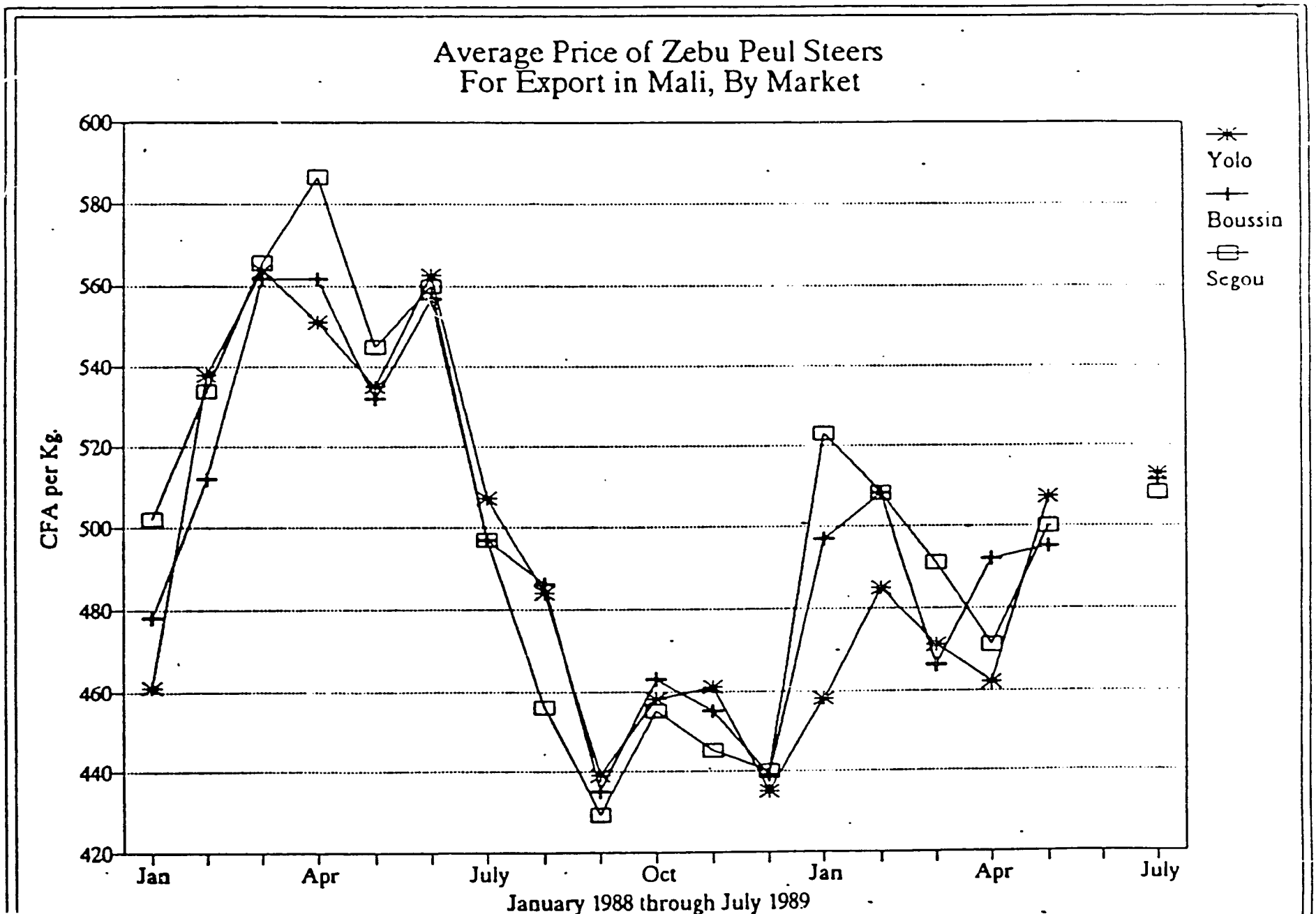
An illustration of the power of such a micro-computer graphics package is shown in Exhibit 4.2. Note how the horizontal axis is labelled by month, with hash marks for each week that data are plotted. The plots by commodity are clearly labelled. The market information is presented in a readily understandable format to anyone with a secondary school education.

The same general principles as to clarity of presentation, user ease in grasping key points, and attractiveness of format apply to radio presentation. Announcing prices of all the commodities traded in a market on a market-by-market basis may be less suitable for wholesale traders, who tend to specialize in one or two commodites, than announcing the prices of one commodity in all markets (before going on to the next commodity). As noted above, users need to be queried as to their preferences. What makes sense to a media specialist or a government administrator may not be desirable from a private trade standpoint.

Another format issue related to radio broadcasts of market information is the comprehensiveness of coverage. Are prices simply announced in rapid succession, one commodity after another, or is there some attempt to assess market conditions and compare traded volume and price variability across markets? In principle, the latter is preferable, although users need to be consulted before designing a radio broadcast program format and after it has been going on for sometime.

A final point on format pertains to language of dissemination. In Kenya, for example, should a market broadcast be in English or Kiswahili, or both languages? Should minority ethnic languages be considered? Again, the right answer is the one that best meets the needs of the MIS user groups.

Exibit 4.2


Average Price of Zebu Peul Steers
For Export in Mali, By Market
CFA per Kg.
600
580
560
540
520
500
480
460
440
420
Jan
Apr
July
Oct
Jan
Apr
July
January 1988 through July 1989
Yolo
Boussin
Segou

Dissemination media

Market information can be disseminated by a variety of media, including radio, one-page price reports, more comprehensive monthly or quarterly bulletins, periodic seminars or workshops, television, price boards at wholesale markets, or orally in person by market monitors or extension agents. Choice of media for dissemination will depend upon available funding, user preferences, and the objective of a particular dissemination effort. For example, weekly radio price broadcasts are not likely to be an effective way to inform most policy-makers of market conditions and their policy implications. Weekly one to two page price reports with a brief description of market developments are probably more suitable for the busy senior policy-maker. Mid-level policy analyst might prefer more comprehensive quarterly bulletins and periodic seminars, in which market conditions are discussed in depth.

5. DESIGN OF A USER-ORIENTED MIS

This section will discuss key design issues for improving the agricultural marketing information system in Kenya and making it responsive to user needs. In order to determine user needs, representative samples of potential user groups need to be surveyed. Key design issues, discussed below, include commodity coverage, number, level and geographic distribution of markets, transactions levels at which market data are collected, grades and standards, volumes offered, transacted or arriving at/shipped from markets, commodity stocks and flows, and changes in marketing policies and regulations.

5.1 Surveying user needs and preferences

The first step in the design of a user-responsive MIS is systematic surveying of perceived user market information needs and preferences. The current Kenyan MIS is clearly not driven by potential user requirements. In fact, there are no regular users of Kenyan market information, with the exception of HCDA information on market prices and conditions for horticultural export crops in key European wholesale markets.

The study team has surveyed users informally, and their needs and preferences are discussed in depth below in the subsections on design issues. The Kenyan and expatriate contract team that actually upgrades the MIS in Kenya will need to survey potential user groups more formally and systematically before implementing the prescribed action plan (see section 8).

The AMIS team has surveyed most potential public users of market information in Nairobi, and some at the district level in the field. Further interviews are recommended with MoA and CBS officials in districts not visited by the study team, and with selected provincial MoA and CBS staff and divisional level MoA extension officers. Key private user groups to survey in a more systematic manner include:

- medium-and large-scale maize and bean producers;
- small farmers who produce a mix a staple food crops, horticultural crops and, perhaps, a traditional cash crop (e.g., pyrethrum or coffee);
- medium-scale farmers who tend to specialize in commercial horticultural crop production and may grow a traditional cash crop;

- small- and large-scale farmers producing crops such as French beans for sale to exporters;

- rural collectors or assemblers of staple food crops (i.e., maize and beans) and horticultural produce;

- wholesale traders handling the same commodities as rural collectors; and

- large-, medium- and small-scale maize processors (millers).

Informal interview guidelines for querying producers and traders about market information needs appear in Annex 7.

5.2 Commodity coverage

Staple crops

As marketing of maize and beans in Kenya becomes progressively decontrolled, collection, analysis and dissemination of improved market information for these two key staple crops are emerging as a top priority. Maize wholesale prices are collected in some urban areas and district centers by MoA/FMD market officers. These prices are transmitted in monthly reports to MoA/FMD headquarters in Nairobi but not announced in the weekly MoA radio program.

The study team strongly recommends improved collection of maize and beans prices in wholesale markets and timely dissemination in both report format to public users and in radio broadcasts to private users. In addition to prices, MoA/FMD market officers should collect information on the volumes of maize and beans in the wholesale market, provide information by grade (high quality, average quality, low grade), and note market conditions and developments (supplies, strength of demand, changes in buying/selling practices during the course of the market week). Rather than reporting simply a weekly average price, MoA/FMD could consider reporting prices as follows:

- average market price on the sole or last major market day of the week;

- the price range for the entire week; and,

- a modal or median price for the week that relates to transacted quantities. That is, a modal price should not be simply the most commonly transacted wholesale price, but the most frequently recorded price of the major market day(s), when the heaviest volumes change hands, or for the largest volume transactions.

Staple food crops such as maize and beans tend to be relatively more homogeneous than horticultural crops, which vary more significantly in their characteristics (variety, size, color, maturity, turgescence, etc.) on a given market day and across seasons. Although a number of hybrid maize varieties with differing maturation periods, photosensitivities, optimal altitudes for growing and moisture requirements are produced in Kenya, white maize is a relatively homogeneous commodity, particularly once it is milled and ready for cooking. Beans are more heterogeneous, as several different varieties are commonly sold alongside one another and at different pries by the same sellers in marke places. Prices, volumes offered for sales and grades should be collected and reported for roscoco beans, Canadian wonder beans ano white beans, which are generally sold in most major wholesale markets.

Although sorghum and millet are also gazetted crops whose marketing is likely to be liberalized by GOK, they are thinly traded in markets visited by the study team. Hence, we recommend against collecting and disseminating market information on these coarse gains in the short to medium term. MoA/FMD could consider adding these commodities to its MIS at a later date, depending on public and private user demand. The same also applies to locally traded staple crops such as green gram, barley, cowpeas and amarinth.

Horticultural Crops

MoA/FMD currently collects horticultural crop prices in key wholesale markets in most districts and disseminates prices for ten major urban markets (Nairobi, Mombasa, Kisumu, Kakamega, Meru, Nyeri, Kitale, Bungoma, Eldoret and Kisii). The commodity coverage is vast: maize, beans, cowpeas, green gram, amarinth, 15 vegetables, 13 fruits, milk, local ghee, honey and eggs (as shown in Exhibit 5.1). Commodity coverage need to be scaled back significantly and more additional information (volumes, grades) should be collected for priority commodities. Prices collection for cowpeas, green gram, amarinth, milk, ghee, honey and eggs can probably be dropped without harm. Two of the vegetables are actually herbs, which are thinly traded and of possible interest to a small, highly specialized group of wholesale-cum-retail traders selling in open-air markets. It is recommended that price collection for these two products (njahi and ginger) be dropped. Tamarind is also a thinly traded fruit, for which marketing information need not be collected at this stage of Kenya's market development.

KIAMBU DISTRICT DATA BASED JAN - MARCH FOR THE 1ST QUARTER OF 1990

COMMODITY	UNIT	JANUARY	FEBRUARY	MARCH
		PRICES		
Oranges	Fruit	-	-	-
Limes	"	-	-	-
Lemons	"	-	-	-
Pawpaw	"	-	-	-
Yellow bananas	"	-	-	-
Green bananas	"	-	-	-
Cooking Bananas	"	-	-	-
Pineapples	"	-	-	-
Avocado	"	-	-	-
Pumkins	"	-	-	-
Brinjals	"	-	-	-
Pears	"	-	-	-
Mangoes	"	1.75	1.75	-
Passion Fruit	kg	-	-	-
Irish potatoes	"	13.00	12.00	11.00
Cassava	"	-	-	6.00
Sweet potatoes	"	-	-	8.00
Tomatoes	"	-	-	-
Carrots	"	-	-	-
Cabbages	"	-	-	-
Maize	"	6.00	6.50	6.50
Cowpeas	"	12.00	10.00	11.00
Beans	"	17.00	15.00	15.00
Green grams	"	20.00	11.50	13.00
Onions	"	28.00	28.00	30.00
Tamarind	"	-	-	-
Njahi	"	-	-	-
Capsicum	"	-	-	-
Ginger	"	-	-	-
Garlic	"	-	-	-
Kales	Bunch	-	-	-
Amaranthus	"	-	-	-
Coconut	Nut	2.50	2.50	2.50
Milk	Tree top bottle	3.75	4.00	4.50
Honey	"	32.50	32.50	31.00
Local ghee	"	42.50	45.00	45.00

Of the remaining 12 vegetables and 13 fruits, strategic choices need to be made by MoA/FMD regarding their commercial importance beyond the local level (i.e., inter-regionally traded volumes) and how widely they are grown by farmers. As an example, some fruits such as coconuts, citrus (oranges, limes, lemons) and pears may be produced in few regions of Kenya and preponderantly by large-scale growers with good private information sources. Such fruits are of likely low priority to the GOK and of very low priority to USAID, whose agricultural portfolio aims to improve market opportunities and incomes of smallholders. Similarly several of the vegetables covered by MoA/FMD appear to be thinly traded in a localized manner (i.e., not inter-regionally), such as pumpkins and brinjals.

Although any choice of commodities to cover in an upgraded MoA/FMD MIS is necessarily arbitrary at this stage (prior to a more systematic survey of user needs), the following suggestions are made based on observations at selected wholesale markets:

Vegetables — Higher Priority: irish potatoes, tomatoes, carrots, cabbages, onions, kale (sukuma wiki).

Secondary Priority: cassava, sweet potatoes, garlic.

Fruit — Higher Priority: pawpaw, green bananas, cooking bananas, pineapples, avocado, mangoes.

Secondary Priority: yellow bananas, oranges, limes, lemons, passion fruit, coconuts.

In the interest of further narrowing commodity coverage and improving the quality and comprehensiveness of data collected for the remaining commodities, it is recommended that 3 - 4 vegetables and 3 - 4 fruits be covered nationally. Other horticultural products of local importance could continue to be collect in selected districts for use by district level farm management officers and extension agents. Information on commodities of local interest would not necessarily (probably not) be transmitted to MoA/FMD headquarters in Nairobi.

5.3 Number, level and geographic distribution of markets

As discussed at length in section 3, MoA/FMD collects price information for horticultural commodities and a few staple crops at wholesale markets in major urban markets and district centers and at rural markets (or at the farmgate) at the divisional level. Market information for horticultural crops of most importance at the national level is collected at ten major urban wholesale markets and at important wholesale (bulking/redistribution) markets in selected districts. Commodity price, volume and grade information can only be effectively transmitted over the radio for some 8 - 12 wholesale markets. Key bulking/redistribution markets outside of major urban areas included in radio price broadcasts will vary by commodity, depending upon their importance as assembly points for particular commodities in the national wholesale trade.

A first step in choosing national wholesale markets for coverage is to examine carefully the rationale for the ten current urban markets. Horticultural price data are collected and (partially) reported for five markets that are geographically circumscribed: Bungoma, Eldoret, Kisumu, Kitale and Kakamega. Based on the relatively short distances between any two of these markets and the fair-to-good quality of the trunk roads connecting them, five markets appear to be excessive coverage. In daily wholesale price sheets for 34 horticultural products, generated by MoA/FMD in August 1989, prices were not at all reported or reported for only a small number of commodities at Kisumu, Kakamega, Bungoma and Eldoret. Clearly, it should be possible to drop horticultural price data collection for the purposes of national coverage in 2-3 of these towns. MoA/FMD may still wish to collect and disseminate maize and bean prices for all five of these likely well-integrated markets.

Market information for key staple crops (i.e., maize and beans) should be collected, transmitted to Nairobi and disseminated for 7 - 8 major urban wholesale markets and for selected district-level wholesale markets in both surplus and deficit zones. Maize price collection points outside of major urban areas should be concentrated in the highly surplus Rift Valley Province and in chronically deficit zones such as parts of Central and Eastern Provinces. Key surplus data collection points might include Nakuru, Njoro, Londiani, Kitale, Kakamega and Bungoma. Deficit points could include Machakos, Kitui, Embu and Meru. Bean surplus zones are principally in densely populated zones dominated by small farmers, such as Western and Central Provinces. Deficit zones are likely to be major urban areas and perhaps selected areas in Rift Valley and Eastern Provinces.

The specific markets chosen for maize and bean data collection will be limited by budgetary considerations and should probably not include more than four marketplaces in addition to the principal 7 - 8 urban areas (for which staple crop and horticultural market information is collected).

5.4 Transaction levels

CBS price data collection should continue at the retail level in its sample of national markets and data should be analyzed and disseminated via bulletins for at least one-third to one-half of the collection points. MoA/FMD should not duplicate CBS efforts, and it should not focus data collection on retail prices.

MoA/FMD currently collects prices at the wholesale level in its national sample of key urban markets, as well as at the district and divisional levels. The wholesale price is not always well-defined and could include any of the following:

- prices received by farmers and paid by rural collectors at the farmgate or in rural markets (district and divisional level);
- prices received by farmers and paid by wholesale traders in rural markets (district and divisional level);
- prices received by farmers and paid by rural or secondary town consumers (district and divisional level);
- prices received by rural collectors and paid by wholesale traders in rural markets, secondary towns or major urban markets (all levels);
- prices received by wholesale traders procuring commodities at rural and secondary town markets and paid by wholesale traders coming from other secondary town markets (district level);
- prices received by wholesalers operating at the district level from wholesale buyers from major urban areas (district and national levels);
- prices received by wholesalers based in district level secondary markets and paid by retailers selling at the district level;

- prices received by wholesalers based in major urban centers and paid by retail traders;

- prices received by wholesalers based in major urban centers from either other wholesalers at the same national marketplace or large-volume institutional buyers; and,

- prices received by large-scale commercial farmers (owning or renting transport) from wholesale buyers based in major urban areas (district and national levels).

The "wholesale" price will vary by type of transaction listed above. At a given district level market, for example, a national wholesale trader based in a major urban market will likely be buying produce in bulk and may be able to bargain for a per unit price discount given the volume being purchased. In the same market place, a smaller-scale wholesaler coming from one district to buy limited quantities for resale to retailers in that other district may pay a higher price per unit for the same produce. Nor is it hard to imagine that the situation might be reversed. The national wholesaler might pay higher prices than the district level trader in order to minimize transactions costs and quickly move a truckload or two to a major urban market. The national wholesaler might buy from a medium-scale district level wholesaler, who had earlier in the market day procured his/her supplies from a rural collector, producer or another medium-scale wholesaler-all in the same marketplace and over the course of a few hours.

Which wholesale transaction level should MoA/FMD data collectors focus on? It depends on several factors. Prices could be collected only for the most common or the typically largest proportion of total volume types of transactions. This then needs to be consistently applied at the same level of the marketing system across Kenya. In a district center, data collectors would probably focus on either rural collector/district center based wholesaler sales to retailers, or on direct purchases from (typically larger) farmers by district center based wholesaler or by national wholesalers based in major urban markets. In a nationally significant urban market, the focal point could be purchases by large-volume, urban based wholesalers from other urban based wholesalers who assemble in other market towns or in different rural areas (depending upon supply conditions), or from wholesalers based at the district level who assemble truckloads locally for shipment to the largest cities. Alternatively, MoA/FMD may wish to focus on the transaction between an urban-based wholesaler and retail traders.

It is important to note that urban-based wholesale traders selling to retailers might be different from those selling to large institutional clients, such as hotels, schools, the army, hospitals, supermarkets, etc., and prices paid by the different buyers could vary, depending upon the volumes purchased and the nature, longevity and closeness of the exchange relationship.

It is important not to become immobilised by the complexity of Kenyan marketing channels and transaction levels. What is needed is a careful discussion among MoA/FMD officers at the national and district level, potential users of market information, and any advisors providing technical assistance of appropriate transactions types and levels for different types of markets, and consistent application of the transaction levels chosen for each market type by marketing officers and field enumerators. It is clear to the AMIS team that data are not collected systematically from any one or two levels at a given market by MoA/FMD field staff. In one case, it was not clear whether the marketing officer was distinguishing between wholesale and retail transactions. Clearly, once strategic decisions regarding transaction level are made at the inception stage, district marketing officers and enumerators and divisional agricultural officers and extension agents will need to be trained thoroughly in the new, more rigorous and clearly spelled out guidelines. Careful follow-up supervision will also be required.

5.5 Methods for collecting wholesale prices

Once the transaction level for price data collection is clearly established, consistently applied procedures need to be developed and followed in actually collecting price data.

Which side of the transaction to observe

Since prices actually paid and received are likely to differ from offer prices quoted by sellers, it is strongly recommended that enumerators collect transacted prices. Ideally, the enumerator should ask both buyer and seller the price paid and received. This may not always be possible if one enumerator is obtaining 4 - 5 observations for some 20 commodities. At a minimum, buyers should be asked about prices paid for specific lots (volumes, grades). Prices reported by buyers can be spot-checked against what sellers report as prices received. If there is any divergence in the two reported prices, the

enumerator can either discard the observation or record both reported prices (for the same lot) and not the divergence. In most cases, divergence is likely to be the exception rather than the rule. As enumerators gain more skill in data collection, better knowledge of the marketplace and supply and demand conditions for particular commodities, and the ability to interpret reported prices, they will develop the capacity to judge whether particular divergent observations should be discarded or noted. They should also be able to probe further in order to reconcile any divergent reports.

Number of observations per commodity

Assuming that one enumerator is assigned to a market and multiple commodities are being traded, it becomes difficult to obtain more than 4 - 5 observations for each commodity. Three observations is the bare minimum. Whatever the number of observations, each observation should be noted to capture the variation in prices during the market day. Supplementary observations about the time during the market day at which observed prices were obtained could also prove useful, particularly if prices early or late in the day were quite different from prices paid/received during the height of the market. Any mean price per commodity should be calculated from the raw data after the market is over, preferably in the office, and verified by the district marketing officer. Under no circumstances should enumerators report only one average price without recording the raw price observations.

5.6 Grades and standards

Well-defined grades and standards are the hallmark of agricultural marketing systems in most industrial countries. Uniform and widely recognised grades permit marketing agents to buy and sell commodities over the telephone or via fax/telex without personally inspecting each lot of produce. Large-volume sellers of agricultural products, such as large-scale farms and specialist wholesale traders, do not need to personally accompany their produce to a physical marketplace. Terms and conditions of a transaction can be negotiated from a distance or even before a crop is planted or harvested. As marketing systems develop, a lower proportion of product volume moves through wholesale (terminal) markets. A higher proportion of product is trucked, shipped or sent by rail directly to the end user. Well-understood and effectively applied grades and standards make this evolution possible. Violations of contract terms with respect to grade may result in substantial penalties for non-compliance.

Such a sophisticated marketing system has only begun to emerge in Kenya during the last decade in the horticultural export industry. The demands of high-income European consumers and the high risk of financial loss associated with failing to make the grade have provided a strong incentive for Kenyan growers of horticultural export crops and exporters to produce, grade and ship the highest quality produce fetching the highest possible prices.

In contrast, the domestic horticultural trade has implicit but not explicit or widely recognised grades and standards. The cabbage trade provides a good example. A commercial cabbage grower (with a ten-acre farm) in Nyeri District reported that bags used for the local trade are one-third to one-half the size of bags sold wholesale in Nairobi. Hence, radio or newspaper reports of wide differentials in price between cabbages in Nairobi and Nyeri had to be interpreted in this light. Similarly, the domestic pineapple trade is dominated by 3 - 4 different varieties of different size and value, produced in different areas, and coming on to the national market during different periods. People in the pineapple trade are intimately aware of these differences and refer to specific pineapple varieties when discussing prices and market conditions. In contrast, MoA/FMD market information for pineapples does not distinguish between varieties or even provide prices on a per kilogram basis.

For those horticultural crops included in MoA/FMD data collection efforts, prices need to be reported per kilogram (rather than per bunch, dozen, bag or other non-standardized unit) and supplemented with information about variety and prevailing market conditions. Given the gathering of more information and more precise information about each horticultural crop included in MoA/FMD market surveys, the number of commodities covered will need to be cut back. In addition, prices, quality and market conditions should be collected and reported for specific bean varieties and not as if beans were a homogeneous and uniform commodity.

Using quality/variety/grade distinctions employed by the private trade is strongly advised in upgrading the MoA/FMD market information system. Reporting prices by grade and for standard units (not heterogenous bunches, dozens, bags or debes) will reinforce standards and grade/varietal distinctions used by the private trade. This will contribute towards the gradual emergence of a more sophisticated marketing system in which personal inspection of each individual produce lot is no longer required.

It is also important to examine carefully official NCPB grades and standards for the schedules crops, particularly maize. NCPB has specific requirements for maize to meet fair, average quality (FAQ) standards. In practice, such standards are not uniformly applied. Sellers of maize to NCPB complain of irregularities in grading maize at NCPB buying centers and depots. Moisture levels are not always respected for maize going into store. The team heard several anecdotes about how NCPB officials may tell the sellers that their maize has a too high moisture content and cannot be put into store, only to reverse this verdict after under-the-table incentive payments were made to the officials doing the grading. There also appears to be no systematic checking of foreign matter content in maize bags put into store. The effect of poor or nonexistent grading at NCPB warehouses on the storeability of accepted maize is likely to be quite negative.

5.7 Volumes of produce offered, exchanged and arriving at/shipped from wholesale markets

Trying to interpret inter-regional differentials among commodity prices in major markets without reference to quantity or volume information is risky and may result in incorrect inferences. Since demand for staple crops is unlikely to vary greatly from one major market day to the next in most urban areas, the volume of grain or beans arriving at the market and offered for sale will the prime determinant of transacted prices.

Quantities of horticultural products offered for sale at wholesale urban markets also have an important effect on price levels. An inter-regional capsicum trader, who is based in Karatina and who ships pickup loads of capsicums to the Nairobi wholesale market once or twice a week, reported that prices will be favorable if less than 60 bags are offered for sale, but unfavourable if 100 or more bags arrive at the market on a given market day.* Even the largest urban market in Kenya for horticultural products appears to be quite thin for most commodities. In contrast with staple food crops, demand for horticultural crops at urban markets is likely to vary more depending on the time of the month (salaried employees are paid at the beginning of the month), the weather (fruit sells better during warmer, sunnier periods), and other seasonal influences (i.e. stronger demand during end of the year holiday periods when marriages and other ceremonies are more likely to be concentrated). Horticultural products are highly income and

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* Since many of the suppliers of the Nairobi wholesale market are based upcountry and do not have access to cold storage facilities in Nairobi, they are forced to sell their produce on the market day they arrive or the next day.

price elastic as well. Consumers in the lower three income quartiles are likely to purchase horticultural products less frequently and in smaller quantities than consumers in the upper quartile, given their budgetary constraints.

Whether considering food products or horticultural produce, supply of commodity on a given market day is a key determinant of price. Private users, particularly traders, need to supplement market information on price with information about arrivals at the market or shipments from the market to other places in order to have a more complete picture of market conditions. Based on their knowledge of seasonal factors affecting demand, traders are able to interpret information about price and supplies accurately. If price behavior appears counter-intuitive or idiosyncratic, traders will seek other private sources of information in order to better interpret anomalies.

Volumes transacted or offered for sale

Wholesale markets in large urban areas in Kenya are busy, and it is difficult to monitor a large range of individual transactions. Hence, it is not recommended to attempt recording volumes of produce transacted. Quantities of produce offered for sale is an accurate measure of supply, as it includes arrivals from other regions on market day as well as locally available produce or carryovers from the previous day. However, produce does not come on the market simultaneously during the course of the market day, making an accurate enumeration difficult. If offered quantities for numerous products were estimated, rough approximations such as high, average or low volume of produce on the market would have to suffice.

Quantities arriving at or shipped from wholesale markets

From the viewpoint of inter-regional wholesale traders, this is probably the most valuable information on supply. It is not especially easy to collect this information at busy wholesale markets, however. Large volumes of produce arrive during a relatively short period before the market begins or as it is getting underway, and some wholesale transactions take place outside the marketplace (in order to avoid paying the per bag market cess). Monitoring shipments of several commodities from an assembly market may also be difficult in that loaded vehicles depart at different times from different points in or near the marketplace.

Recording arrivals requires that enumerators be willing to arrive at the marketplace (or roam the streets near the marketplace) early in the morning (sometimes as early as 4 - 5 a.m.), when the trucks come rolling in and produce is sold off the back of the truck. Information on arrivals is especially important for terminal markets, whereas shipments from a marketplace are important for collection or redistribution markets. Collecting data on shipments requires that the enumerator count sacks and/or truckloads departing the market near or after its closing.

Information on arrivals/shipments can be as crude as broad designations such as high volume, average volume or low volume for a particular marketplace to a detailed enumeration of sacks. One method might be to note numbers of different types of truckloads (10 ton, 6 ton, 2-3 ton), and to use standard conversion factors, which are likely to vary across horticultural products, for calculating tonnage. The larger and busier and the market, the more difficult it becomes to operationalize a system requiring precise enumeration.

The type of information collected and recorded will depend in large part on the training and skill of enumerators, as well as their willingness to arrive at marketplaces early enough or remain there late enough in order to record arrivals/shipments accurately. An important early task for the MIS contract implementation team will be to bring MoA/FMD marketing officers and enumerators together in a workshop at which experiences, techniques and problems encountered are shared. The actual method adopted will end up reflecting a least common denominator, or a technique that can be accurately employed by the weakest enumerators. More accurate accounting of arrivals/shipments may be possible for smaller terminal markets, or assembly markets which specialise in a narrow range of commodities, while broad characterisations of supply are probably all that is feasible at the busiest and largest volume terminal markets.

Commodity stocks and flows

Public users of market information such as NCPB need to monitor stocks of key commodities (especially maize) in store and transferred inter-regionally. NCPB is planning to improve its internal capacity to monitor maize stocks and flows, as its role changes from one of monopsony/monopoly inter-regional trading agency to maintainer of strategic grain reserve and stabiliser of prices (within a broad price band). NCPB information on maize stocks and flows will presumably be monitored by the MoSM and the Office of the President, although it is not likely to be made publicly available. The AMIS study team recommends against any duplication in collection of data on stocks and flows for staple commodities. Collecting such data is too ambitious at this stage in the development of Kenya's market information system.

The study team also recommends against collecting data on stocks and flows of horticultural products at this stage. Stocks of perishables are very short-lived and dependent on cold storage, which is not used in the domestic horticultural industry other than for exported produce in cold storage at Nairobi prior to international air shipment. Any information on flows will have to be gained from data gathered at wholesale markets on arrivals and shipments.

5.8 Changes in marketing policies and regulations

Probably the highest priority in the short term in Kenya is to publicise policy reform measures widely and to clarify ambiguous or arbitrarily interpreted rules of the game (i.e., regulations) applying to inter-regional trade in key staple crops. The study team was concerned with varying interpretations of current GOK regulations, particularly those regarding inter-district maize movement, among private and public actors in the food system. The ten-bag rule is construed as, or observed to be enforced in practice as, any one of the following:

- farmers and consumers are allowed to move up to ten bags in one vehicle across district lines without a movement permit (the correct legal interpretation of the regulation);

- farmers and consumers are able to move up to ten bags across district lines without a movement permit, provided the ten bags do not end up being shipped in one vehicle (a pragmatic interpretation of the regulation, designed to avoid police harassment);

- informal traders are allowed to move up to ten bags in one vehicle across district lines without a permit (an incorrect legal interpretation of the regulation);

- informal traders are able to move up to ten bags across district lines without a movement permit, provided the ten bags do not end up being shipped in one vehicle (how smaller-scale informal traders pragmatically avoid police harassment).

There is also confusion over whether the ten-bag rule applies to inter-district shipments of beans. The official policy is that any inter-district beans movement is illegal, even though it was clear to the study team that beans were an important commodity in the informal trade. A wholesale/retail trader in Nyeri market reported moving moderate quantities of beans (2 - 3 bags per week) from Meru by matatu. Transporters charge traders a higher shipping rate per bag for beans than for maize. This is due to the higher dashes paid by transporters to police for moving beans across district lines. In order to minimise the risk of paying police for the right to move beans, maize, millet and sorghum purchased in Meru District to Nyeri District, the trader reported transporting his bags at night.

As maize marketing reform continues, the GOK needs to make a more concerted effort to distribute timely information about policy and regulatory changes through several media and using several languages (Kiswahili and English at a minimum). MoA/FMD radio broadcasts of extension or marketing programs could very productively contribute to improved public understanding of market reform issues and permissible practices. Extension programs could attempt to clarify ambiguous or arbitrarily enforced regulations and answer common questions from listeners. As the pace of reform quickens over the next several years, it becomes all the more imperative to get out the word at different times using available media as effectively as possible. GOK announcements of new regulations in Nairobi, over the radio or in the newspaper at only one point, is no substitute for multiple announcements at different times using different media and follow-up designed to interpret regulatory changes more clearly for public and private parties. GOK policy reforms could also be incorporated into MoA/FMD farm extension messages and interpreted by extension officers in clear and simple language to farmers and traders.

6. ASSESSMENT OF EXISTING INSTITUTIONAL CAPACITY

This section examines critically the current institutional capacity to collect, process and disseminate agricultural pricing information in Kenya.

The discussion is limited to two institutional entities, as their objectives appear, between them, to include the provision of all agricultural marketing information which may be demanded by the market for such information, as defined in sub-section 7.1 below.

These institutional entities are:

- the Central Bureau of Statistics (CBS) of the Ministry of Planning and National Development (MoPND);
- the Farm Management Division (FMD) of the Ministry of Agriculture (MoA).

6.1 The Central Bureau of Statistics

The Central Bureau of Statistics (CBS) is a department within the Ministry of Planning and National Development (MoPND). Despite its orgarisational status as a department within a ministry however, CBS is in practice a semi-autonomous body, and the Director of Statistics has statutory authority to collect any data required by any GOK ministries or departments.

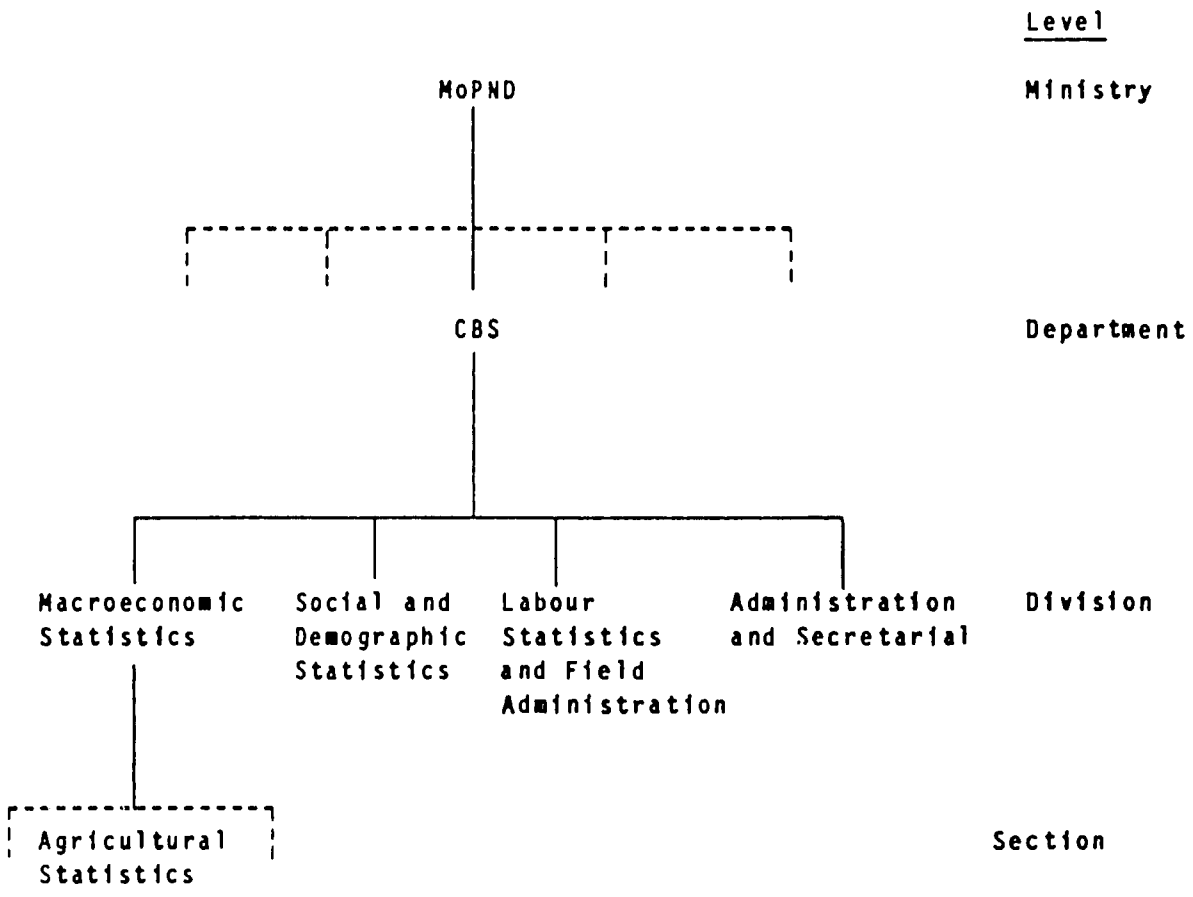
Current structure of the Central Bureau of Statistics

At present CBS is divided into four divisions, namely:

- macroeconomic statistics;
- social and demographic statistics;
- labour statistics and field administration;
- administration and secretarial.

Agricultural statistics - including pricing information - are prepared by the Agricultural Statistics Section within the Macroeconomic Statistics Division. This organisational arrangement, showing the position of the Agricultural Statistics Section within the MoPND, is shown diagramatically in Figure 6.1.

Figure 6.1: Indicative Structure of the Ministry of Planning and National Development, Showing the Agricultural Statistics Section



The activities of the Agricultural Statistics Section (ASS) are divided into seven sub-sections, namely:

- crop forecasting;
- market pricing survey;
- large farms census;
- environmental statistics;
- co-operative statistics;
- nutrition statistics;
- agricultural production.

While these activities vary in complexity and volume, it is clearly the case that the workload of this section is significant. It is partly as a result of this that a proposed restructuring of the CBS has been prepared, which includes, inter alia, the elevation of the ASS to divisional level.

Collection of data

The preparation of the wide range of statistical information for which CBS is responsible involves the collection of considerable volumes of raw data, which originate throughout the country. A number of data collection methods are used to obtain raw data, and data collection is organised in one of the following ways:

- by CBS staff at major urban, provincial and district levels;

- by CBS staff located within other ministries;

- by sources external to CBS.

CBS staff at urban, provincial and district level

In addition to head office staff based in Nairobi, CBS has a network of enumeration staff distributed throughout the country, whose function is to collect and forward to CBS head office survey data relating to the full range of statistical information produced.

These enumerators are employed in the Field Administration division of the department of Labour Statistics and Field Administration, which is structured as follows:

- within each administrative district, enumerators (who are clerical grade personnel) are responsible for data collection. The number of enumerators varies with the size and complexity of the district of the district, and is generally between 2 and 15;

- first line supervision of the enumerators is undertaken by Field Supervisors, of whom there are generally two in each district;

- at district level, the overall co-ordination of data collection is undertaken by District Statistical Officers (DSO's), of whom there should be one per district;

- DSO's report to Provincial Statistical Officers (PSO's) of whom there should be one in each province;

- PSO's report to the Field Administration Division at CBS, where there should be two co-ordinators, responsible respectively for East and West Kenya.

The organisation of the Field Administration Division is shown diagramatically in Figure 6.2.

CBS staff located within other ministries

In some cases, where CBS requires substantial quantities of data from other government ministries, statistical staff employed in the Field Administration Division are deployed to work specifically in those ministries, sometimes in conjunction with the staff of the ministry itself. This arrangement operates only at ministerial head office level in Nairobi. Examples of ministries in which this arrangement operates are Health and Education.

Sources external to CBS

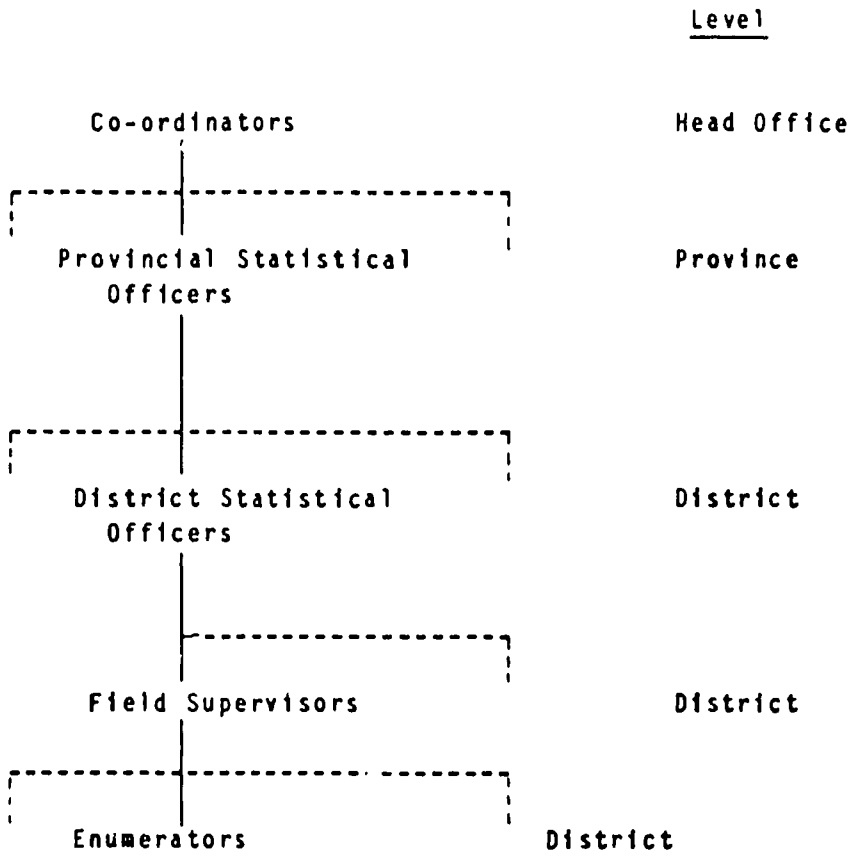
In some cases CBS receives information from other institutions which it simply disseminates and acknowledges the source.

There appears, however, to be some degree of reluctance to process data collected by other institutions and publish it as CBS information. This is because the methodological rigour applied to surveying and data collection in CBS is not guaranteed to be applied elsewhere, thus calling into question the quality of the raw data.

Training

CBS operates both formal and on-the-job training for staff, in order to address both immediate, operational and longer term, developmental requirements.

Figure 6.2: Organisation of the Field Administration Division



Operational training

CBS head office staff provide operational training based on specific questionnaire administration to field staff. One head office staff member will generally train enumerators from three or four districts at one time. The length of the training provided will depend on the length and complexity of the questionnaire being introduced.

In addition to training sessions with a head office instructor, field administration staff are also provided with detailed user manuals relating to specific survey instruments as they are introduced. The manual is a permanently available reference document for use in the solution of day to day queries.

User manuals are generally comprehensive. The Agricultural Production Survey manual, for example, comprises 49 x A4 pages.

Formal training

The technical nature of the work of CBS requires basic technical aptitude at lower levels, and formal, tertiary level statistical training at higher levels.

Enumerator and Field Supervisor staff are required to be educated to Form IV level. This basic educational background is then supplemented by the operational training referred to in (a) above.

District, Provincial and head office "officer" and "statistician" level positions require higher levels of formal qualification at diploma, first degree and post-graduate levels.

At diploma level, Kenya Polytechnic offer a 2.5 year Diploma in Social Statistics. In conjunction with the Department of Personnel Management (DPM), CBS has been sending between 10 and 15 staff per year to undertake this programme for the last 2 years. Prior to this, staff were sent for the Diploma in Statistics programme at the University of Dar-es-Salaam, which has now been discontinued.

At degree level and post-graduate levels, specific programmes in statistics are not available in Kenya. The provision of training at this level tends to be for individuals with statistically related first degrees (e.g. economics, mathematics) to pursue post-graduate studies in statistics. Support for formal training has also been forthcoming from the donor community. In general, the emphasis within formal training has been at the diploma level. The principal reason for this is discussed below.

Staffing

CBS staff may each be allocated to one of three broad categories, namely:

- professional;
- technical;
- clerical.

Two principal distinctions between these grades lie in the entry qualifications required, and the level to which is is possible to rise. In brief, a good first degree (minimum upper second class honours) or a post-graduate qualification is required to enter the professional cadre. The senior professional grade post within CBS is that of Director of Statistics.

The minimum qualification required for entry to the technical cadre is a diploma, although degree holders who fail to enter the professional cadre may be placed at this level. The most senior position to which one can rise in the technical grade is Chief Statistical Officer. The respective grades within the professional and technical cadres are compared in Figure 6.3.

Although CBS is the largest consolidated body of statistical expertise in the country, it is still not sufficient to meet all of the demands that may be required of it. Situations of this type rise for either or both of two reasons, namely:

- the institution fails to recruit and retain sufficient staff to fill all approved positions;

- the level of approved staffing is insufficient to enable the institution to meet the demands placed on it.

In the case of CBS, it appears that both of the above problems exist.

Figure 6.3: Professional and Technical Staff Grades, Levels and Equivalents

Professional	Technical
Director	
Deputy Director	
Principal Statistician	Chief Statistical Officer
Senior Statistician	Principal Statistical Officer
Statistician I	Senior Statistical Officer
Statistician II	Statistical Officer I
	Statistical Officer II
	Assistant Statistical Officer

Failure to recruit and retain staff for approved positions

It is currently the case that not all established positions in CBS are filled. Vacancies may be divided into three categories, namely:

- professional;
- provincial/district;
- programmers.

At professional level, the failure to recruit and retain sufficient staff is due to:

- a national shortage of the qualifications required;
- uncompetitive terms and conditions of service offered by GOK.

At this level, CBS finds itself in the unfortunate no-win situation of having to offer capable staff further training (especially masters' level training) to retain their services in the short term, while the completion of higher qualifications almost invariably leads to staff leaving in the medium term.

Professional cadre staff who leave CBS do not necessarily go to take up more lucrative positions in the private sector, as may be expected. Rather they tend to leave for other GOK ministries or departments offering more attractive opportunities, or for the parastatal sector.

In the case of technical staff at provincial and district level, a staffing problem exists not so much because of severe national skills shortages and poor terms and conditions of service, as because better educated individuals generally prefer to live and work in major urban areas, particularly Nairobi. As a consequence, only 34 out of 42 District Statistical Officer positions are currently filled.

Programmers are the third category of employee whose recruitment and retention is currently proving problematic. The reasons for this are:

- high level programming skills are in short supply, and have a high commercial value which is not reflected in the packages currently offered;

- programmers are classified within the technical rather than the professional cadre within CBS, and so their opportunities for advancement are limited.

Inadequate establishment levels

In addition to the staffing issues raised above, CBS is also restricted in its activities by limitations placed on the numbers of staff it can seek to recruit.

It is considered within CBS at present that even if it were able to recruit appropriately qualified personnel to fill all the approved vacancies it has, the staffing would still not be sufficient to enable it to perform adequately all the duties required of it.

As a consequence, a proposal has been prepared within CBS concerning the restructuring of the entire department and the revision of staffing levels. At present this document is confidential, and has yet to be considered by GOK.

6.2 The Farm Management Division

The Farm Management Division (FMD) of the Ministry of Agriculture (MoA) is the second major institutional entity having responsibility for the collection, processing and dissemination of agricultural pricing information. There is, however, no formal communication of such information between FMD and CBS.

Current structure of the Farm Management Division

FMD is a division of the Ministry of Agriculture, having staff both in MoA head office in Nairobi, and in the geographically dispersed offices of MoA, down to district level. FMD comprises three sections, namely:

- Farm Inputs and Marketing;
- Farming Systems and Statistics;
  Land Use Planning.

Price information relating to a specified range of agricultural commodities is collected either by, or under the supervision of the Marketing Section within the Farm Inputs and Management branch of FMD.

The position of the Marketing Section within the Ministry of Agriculture head office is shown diagramatically in Figure 6.4. Outside the Ministry head office, farm management and marketing staff are employed down to divisional (i.e. sub-district) level. On day-to-day issues these staff report through the dispersed line management structure, while on issues of policy they report through the FMD hierarchy. The flow of information regarding agricultural prices is through this disseminated FMD structure, indicated by the dotted lines in Figure 6.5.

Although Figure 7.5 shows Marketing Officers' positions as being firmly established within the regional structure, it is in fact the case that these positions are created on the basis of perceived need by the Provincial Directors of Agriculture (PDA's) and the District Agricultural Officers (DAO's).

Provincial, district and divisional level marketing officers' posts do not currently exist within the establishment of MoA. This is not to say, however, that PDA's and DAO's can simply create these supernumerary posts at their discretion. Rather, it is the case that if they require the marketing function to be fulfilled at provincial, district or divisional level, they have to use a member of staff who has been employed in a position that has been approved in the establishment, and re-deploy him/her.

Clearly, the formal structure as it currently stands does not place any inherent emphasis on the importance of the marketing function. Proposals to change this are currently being formulated within the MoA for the approval of the Director of Agriculture, and submission to the Department of Personnel Management for formalisation.

Figure 6.4: Indicative Structure of the Ministry of Agriculture Showing the Marketing Section

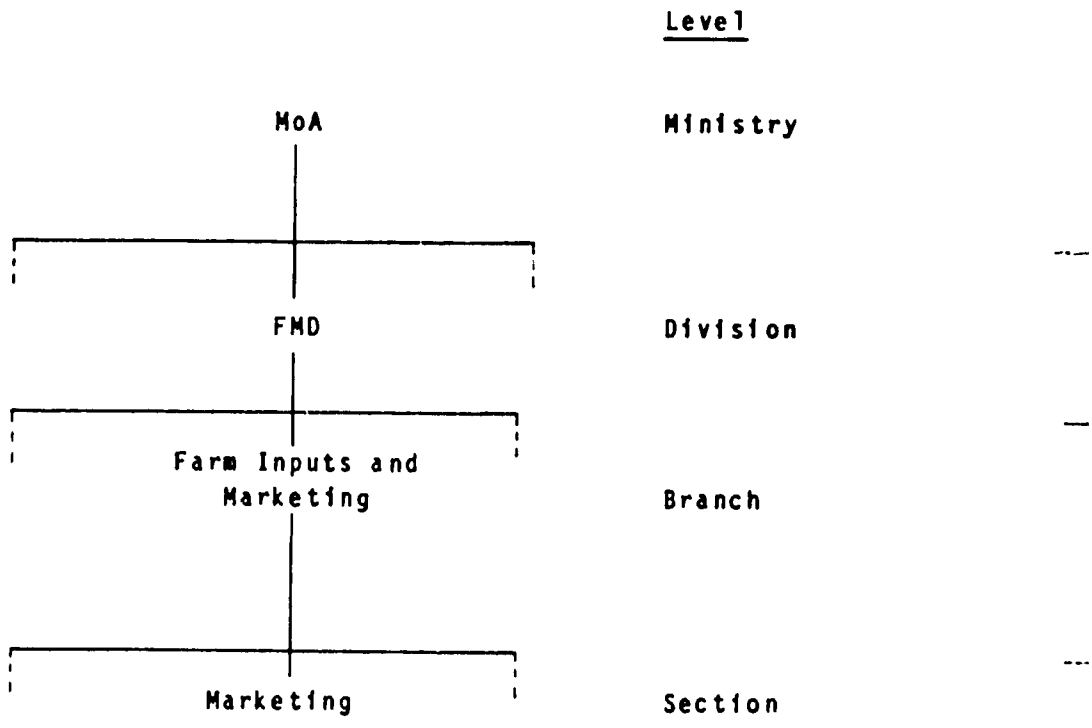
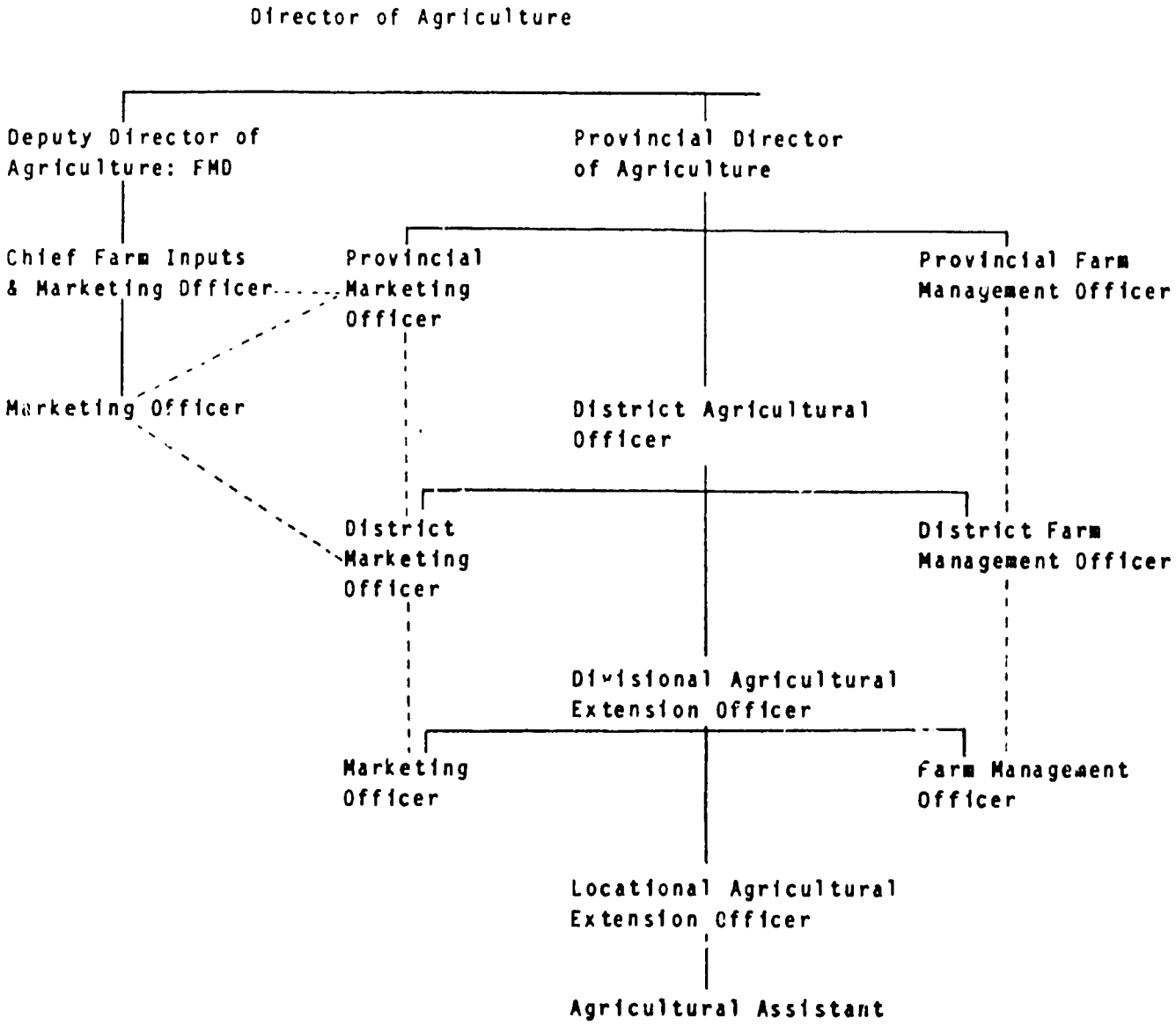


Figure 6.5: Indicative Reporting Structure: FMD Head Office and Field Staff



Note: Dotted lines represent flows of information and policy reporting, not chains of authority and command.

Collection of data

FMD currently collects and disseminates wholesale price data for a selected range of agricultural products. These data arrive at FMD as a result of one of two possible systems, relating to:

- the daily collection of wholesale prices in ten major urban markets;

- the on-going collection of pricing information throughout the country, including the rural areas.

These systems are described in section 3. With respect to the daily collection of wholesale price information for compilation and dissemination on a weekly basis, one problem sometimes faced within the current system is the availability of communication facilities, and associated with this a lack of willingness to incur the cost of using these facilities where they are available.

It is reported, for example, that telex facilities (which are more reliable and less expensive than telephone) are not universally available for the communication of daily urban wholesale price data. District Agricultural Officers, however, (see Figure 6.5) may be unwilling to permit the use of the telephone for the submission of such data, because either:

- sufficient allowance for such telephone calls has not been made in their budget; or,

- if funding is available, they prefer it to be used for other purposes than trasmitting pricing data.

A critical issue here, which is also reflected in the lack of any properly developed system for collecting rural pricing information, is that little importance has been attached to this information in the past. The role of the MoA in its interaction with farmers has been predominantly technical in orientation, with extension messages focussing primarily on increasing production.

With the recommended addition of a marketing content to extension activity, a change in attitude of MoA personnel will be required, which will increase their awareness and acceptance of the commercial import of their role.

Training

As described in sub-section 3.2, the system used by FMD for price data collection and recording are not standardised throughout the country, nor are they necessarily statistically rigorous.

If wholesale price data are to be collected and analysed, and used in the formulation of marketing extension messages, it is important that these data should be as reliable as possible. To achieve this, procedures must be determined to provide a framework and guidelines for:

- data collection;
- data analysis;
- information dissemination.

Relevant staff in FMD will then require training in the application of these procedures.

The level of formal statistical expertise required to operate the data collection, analysis and dissemination procedures will not be high. Consequently, the recruitment of individuals with formal statistical qualifications will not be necessary. What will be necessary will be the provision of adequate in-service training regarding the methods and procedures to be implemented. This training should be provided to staff undertaking marketing roles in the decentralised MoA structure, including the Agricultural Assistants at sub-locational level who will be responsible for primary level data collection.

While the application of the procedures referred to above will not require any formal qualification in statistics, the initial design of these procedures will require an element of statistical expertise. The requirement for such statistical expertise will, however, be on a one-off, or at most an intermittent basis. It is not, therefore, necessary that such expertise should be embodied in the staff of the MoA/FMD on a full-time basis.

An appropriate division of responsibility would appear to be for the FMD and MoA through their existing, decentralised extension network, to collect, analyse and disseminate wholesale price data, while CBS provides the procedural design and initial training expertise, including, perhaps, the preparation of detailed user manuals relating to the new procedures.

Staffing

FMD requires two categories of staff in its decentralised operations, dealing respectively with farm management and marketing. These are the provincial, district and divisional level Farm Management Officers and Marketing Officers shown in Figure 6.5. above.

The Marketing Officer positions at all levels are not yet formally approved within the MoA/FMD establishment, and so the performance of these functions is largely at the discretion of the Provincial Directors of Agriculture and District Agricultural Officers. As a consequence, there are at present only two de facto Provincial Marketing Officers out of a possible seven, and twenty four de facto District Marketing Officers out of a possible forty two.

As there is increasing emphasis being placed on the importance of generating and communicating market information, the establishment of an adequate network of trained and motivated staff must be accepted. Internal proposals regarding establishment levels are currently being prepared, for consideration by the Director of Agriculture and subsequent approval by the Department of Personnel Management in the Office of the President. These proposals request the establishment of one marketing position in each province and each district. This would require an increase of forty-nine in the establishment, of which twenty-six are already de facto incumbents.

6.3 Summary and recommendations

It would, clearly, be possible to propose a number of new institutional vehicles to meet the needs of an effective MIS. To propose, however, the establishment of a new organisation to provide these services would be to create a duplication with the activities of CBS/ASS and MoA/FMD. Furthermore, as concluded in section 3 above, the two organisations, taken together, are potentially capable of fulfilling the requirements of a user-driven MIS.

An assessment of the existing institutional capacity of CBS and FMD reveals, however, a number of areas of organisational weakness that need to be addressed in designing an effective MIS strategy, most notably the following:

- a "process" orientation of senior management that tends to view the collection of data as an end in itself rather than the means to provide a better understanding of marketing issues and to meet user requirements;

- problems of adequate supervision of data collection arising from staff shortages, unattractive terms and conditions, inadequate training, and shortages of transport and other equipment;

- in the case of FMD, a lack of adequate communication facilities to ensure timely reporting of price data;

- at the enumerator level, shortages of basic equipment (scales and measuring tins) and transport allowances to ensure prescribed market coverage and visit frequency.

The statistical expertise required to develop the data collection and analytical methodologies is not currently embodied within FMD, nor is it planned that it should be. This expertise will not be required on an ongoing basis for agricultural price monitoring purposes, and it would be a misuse of scarce resources at the national level to tie such expertise to an activity where it will not be fully utilised. The required expertise is currently available within CBS, and should be used on an as required basis. CBS should be responsible for the development of appropriate data collection and analytical methodologies, and for the preparation of supporting documentation and training to facilitate their implementation.

In addition, more emphasis should be placed on the importance of market information from the perspective of MoA staff at district level and below. At present, market information is collected and reported infrequently, and no particular importance is attached to it. Part of the reason for this is that the collection of market information does not impact upon the day-to-day work of the Agricultural Assistants at sub-location level. The introduction of marketing extension messages will change this, such that Agricultural Assistants will provide feedback for farmers on the basis of price information they collect. Careful explanation of the objectives of this system to MoA staff down to and including Agricultural Assistant level will be required if its success is to be ensured.

Aware of these problems, both CBS/ASS and MoA/FMD have put forward proposals to strengthen their respective organisations. In the case of CBS, proposals call for a substantial increase in staffing and an elevation of the section to divisional status. At the same time, MoA/FMD proposals seek to reorient the organisation by recognising that the strengthening of the agricultural marketing function requires dedicated provincial and district marketing officers under the direct line of authority of the unit. Again, proposals would require increased staffing and enhancement of the marketing unit's status.

Assuming both proposals are viewed favorably by GOK, they will go some way to meeting the strenthening of institutional capacity required to meet the mandate of providing an effective agricultural MIS.

There is, however, in addition a strong case for temporary ad hoc assistance to both organisations to rehabilitate their operations both at head office and field level in the areas of general management/supervision, training, general budgetary support and equipment provision. The way in which such support could be formulated into a project is detailed in the following section.

7. A STRATEGY FOR STRENGTHENING MIS

7.1 The demand for market information services

The demand for domestic agricultural market information in Kenya is manifest at four major levels:

- farmers seek information about prices they can expect to gain in the future as they make planting decisions in the present; prevailing prices in local markets that they can use as a basis for negotiation with traders; and the whereabouts and accessibility of buyers for their produce;

- traders want to know where they can "buy cheap and sell dear": ie., market prices and conditions at major supply and selling points across the country;

- GOK has an interest, in some cases incipient, on dual levels. At the national level, key ministries (e.g. OTP, MoF, MoPND, MoA, MoSM) seek to ensure that the interests of important groups (e.g. farmers, consumers, GOK) are not threatened as a result of policy reforms. NCPB wishes to utilise information on staple food stocks and market prices to ensure that the food security of the nation is not at risk and that there is an appropriate regional distribution of food staples. At the provincial and district levels, some officials wish access to monthly price reports on food items as a means of gauging food supply conditions at the local level and some MoA farm management/extension officers wish a reliable source of local market information to provide marketing extension advice to their client farmers;

  donors seek information on the impact of existing GOK agricultural policies on market prices for staple food crops and wish to monitor the effect of changing prices and regulations on market prices.

7.2 Major agencies providing domestic agricultural market information*

In section 3, it was identified that CBS and MoA are the principal agencies that, ostensibly, are providing market information services to the four user groups outlined above. In reality, however, farmers and traders use their own informal information sources and assign little credibility to the published MoA market price data (newspaper reports and weekly radio presentation). CBS collects and compiles data that is, potentially, useful for analysing policy impacts but, in most cases, donors and GOK agencies never get access to this data (reflecting the de facto refusal by CBS to release the information and/or lack of requests for the data from would-be users).

As NCPB embraces its evolving role as a buyer and seller of the last resort and the agency responsible for national and regional food crop security, then, so will it be mandatory that NCPB has its own market information system that allows management to have its finger continually on the pulse of the staple food crop formal and informal market. It is inconceivable that NCPB would relay on other GOK agencies (e.g. CBS, MoA) for such critical information and, concomitantly, it is unlikely that NCPB would make data available in a manner that would assist the marketing decisions of farmers, traders, millers etc. Currently, NCPB is identifying its management information requirements in general, and marketing information requirements in particular, with a view to installing the necessary systems as soon as possible.

For well over a decade, CBS has been collecting, and sometimes publishing, retail price data on nine basic food items (including maize and beans) for 64 markets. Within the six districts that comprise the KMDP area, market centers are regularly surveyed as part of the overall CBS rural market survey program. The collection, compilation, and presentation of this weekly data requires about a two month elapsed time: ie. information collected for March could be available in a form suitable for would-be users by early June. As such, this service does not lend itself to the immediate turnaround requirements of a market information service focussed at, in particular, traders. Further, the transaction level surveyed - retail prices - is also not appropriate for this user group.

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* For convenience, some of the arguments presented at length in section 3 and 5 are summarised here prior to detailing proposed project strategy and components.

However, the two month time lag is not of concern to the policy analyst and, for Kenya, the mere availability of ten years or more of time series data, and the geographical and commodity coverage of the survey well suit the CBS-generated data to the needs of this user, whether the analyst be representing donors, GOK, or both. MoA has also been collecting agricultural commodity wholesale market prices in key urban markets across the country and at the rural district and divisional level for more than a decade. As per CBS, the collection of this data has become an end in itself and not the means to provide a better understanding of marketing matters. With the termination of the FAO-financed Marketing Services Project, operational funds for the collection, compilation and dissemination of market information have become scarce and only sporadically available; as a result, time series data has been broken and the daily radio dissemination of urban market wholesale prices has been reduced to a weekly service and, then, only for a very few market centers. However, a market information service - skeleton and inadequate albeit - is in place and could provide relevant, meaningful, reliable, impartial, promptly available, and easily accessible information for the use of, in particular, larger-scale farmers and traders if the service was reoriented, refined and, in general, rehabilitated. At the district and divisional level, MoA could utilise its wholesale market information service (again refocused and rehabilitated) to provide a local marketing extension and advisory service to be delivered by extension workers to farmers and smaller-scale farmers, in particular.

The wholesale market prices collected by MoA, in conjunction with the retail market prices collected by CBS, could provide the raw data requirements for the analyst to explore wholesale and retail margin movements - across the country, across seasons and over time. This would be a critical analytical component in determining the extent to which liberalisation of the markets for staple foods increases marketing efficiency and produces fairer prices for both farmers and consumers.

7.3 The conceptual approach

The principal thrust of a proposed market information service project, therefore, would be to refocus and to revitalise existing services in a way that they are driven by the needs of the information users i.e. to establish a market-oriented market information service. The agricultural product price statistics section of CBS and the Farm Management Division of MoA are the two institutional vehicles that will provide (and, to a limited extent, are already providing) the needed services. The logical framework for the proposed project is presented in Annex 8.

The goal of the proposed project is to contribute towards increasing returns and enhancing the stability of return to farmers from the sale of staple and other food crops in the domestic market. The purpose is to increase market transparency for farmers, traders, policy-makers and development agencies with regard to price trends for maize, beans and other food crops in Kenya. Major project outputs would include:

- a daily MoA/FMD wholesale market report, published in the national press and broadcast on radio, for key commodities (including maize and beans) in major urban markets and supply market centers that are used by, in particular, traders and large-scale farmers to assist them in making better buying and selling decisions. A key feature of this revamped service would be bi-weekly commentary on likely future market conditions for selected commodities;

- the provision by CBS, on a frequent and regular basis (monthly or quarterly) of retail price data on major food items (including staple crops) across important rural and urban market centers in Kenya for the use of policy analysts in GOK and donor agencies;

- a much strengthened MoA capacity at the district and divisional level to provide marketing extension services to small-scale farmers. This would be effected by analysis at the divisional level of data currently collected in sub-locations to provide localised price trends analysis for incorporation into a marketing extension handbook;

- an explicit program, including components directed inter alia at farmers, traders, police and municipal authorities, GOK personnel at the national, provincial and district levels, NCPB and MoSM head office and field personnel, to educate interested parties as to the cereals status quo and the subsequent changing regulatory environment associated with the marketing of maize, beans and other staple food crops in Kenya.

The way in which intended project outputs would meet differing user requirements, together with required inputs, delivery mechanism and attendant agency responsibility, is presented in summary form in Table 7.1 attached. It should be noted that following discussions with senior management of the Agricultural International Centre (AIC), it was concluded that no formal institutional support was required by AIC to undertake its role in dissemination. The proposed project does, however, include provision for incremental costs incurred by AIC in carrying out the augmented responsibilities shown in Table 7.1.

Table 7.1: MEETING MIS USER NEEDS

MIS USER	INPUT (Agency)	OUTPUT (Agency)	DELIVERY (Agency)
1. Large farmers/ traders	Wholesale price data (FMD)	Daily wholesale price reporting, bi-weekly market commentary (FMD)	1. Newspaper (FMD) 2. Radio (AIC)
2. GOK/donors	Retail price data (CBS)	Monthly or quarterly price series (CBS)	1. Informal to GOK: MoA/DPD and donors (CBS) 2. Monthly/quarterly statistical bulletin (CBS)
3. Small farmers	Sub-locational market price data (FMD divisional level)	Periodic summary price/trend analysis (FMD divisional level)	Marketing extension material (AIC)
4. Large farmers/ traders/millers	Market regulations (MoSM/CSRP Steering Committee)	Agreed policy statements on regulatory environment (FMD)	Mass media campaign (AIC)

CSRP - Cereal Sector Reform Programme

7.4 Project components

In concept, the proposed project would have two major components, one focussed at CBS and the other at MoA.

CBS/ASS

The staff of the Agricultural Statistics Section (ASS) of CBS cannot provide the data that are required by policy analysts to monitor the impact of CSRP and KMDP unless external assistance is provided, and the sooner the better. The section has collected and entered data on staple crop prices across the country up to May, 1990 (as of July, 1990) but the past three years of data await quality control checking by professional staff in the section. Further, important time series data for the period prior to 1986 are "locked" in the main frame computer and lack of programming support has ensured that the data remains inaccessible. Because of understaffing at the professional level and other agricultural statistical commitments (crop production forecasts, rural welfare surveys, ad hoc surveys etc), the section is falling further and further behind with its market price program. In addition, it has been some ten years since any of the field level staff (enumerators etc) received any training and staff turn-over has been very high. Several important rural markets have not been surveyed for years because of lack of transportation facilities and/or funds for enumerator travel and scales and standard measuring tins (e.g. debe containers) have been lost in many areas and adversely affect the accuracy of reporting.

The proposed project will provide emergency support to the Agricultural Statistics Section of to enable it to clear its backlog of work on retail market price collection and dissemination, and establish on-going systems and procedures for the regular production and dissemination of "clean" market price data to government and donor policy analysts. The emergency support team will be led by one long-term expatriate TA advisor, assisted by short-term TA as required. It is envisaged that six man-months of short-term TA will be required for downloading of data, training needs assessment and training manual production, and the setting-up of in-house printing facilities with attendant training.

Once this emergency phase is accomplished, the project will provide longer-term support to the Agricultural Statistics Section in: provision of needed commodities (scales, measuring tins, motor bikes and spares, micro-computers and software, training equipment and printing supplies, publishing equipment and supplies); in-country training of head office and field level staff in market price date collection, processing, analysis and dissemination; regional short-course training of section senior staff in management of data collection, processing, analysis and dissemination; provision of a pool of local currency funds for key operational expenditures associated with market price date collection and observation (eg. for covering enumerator transportation costs). The total duration of project-financed support for the section would be two years.

MoA/FMD

The food crop wholesale market price monitoring and reporting capacity of the MoA is housed it the Farm Management Division, with a small staff as headquarters in Nairobi and the large majority - marketing officers, clerical staff, enumerators - based at the district and divisional level in rural areas. Since the termination of the FAO 'Marketing Services Project', the collection, compilation, analysis and, not least, dissemination of wholesale market prices has lost direction and energy; the triad of reasons for its continuing decline are that: fundamentally, it does not service the needs of any key client group (i.e. farmers, traders, district/provincial level and Nairobi-based MoA staff); it has been systematically starved of operational funds for data collection, transmission, compilation and analysis, and dissemination; and, it has not been accorded a high priority at either the H.Q or district level and, as a result, wholesale market price data are inconsistent both in availability, quality, and coverage.

The proposed project would provide support to the Farm Management Division of MoA to establish a market information service that responds to the needs of Kenya user groups: ie. farmers, traders, extension officers, and GOK/donor policy analysts. A sine qua non for launching this component of the project is that MoA/FMD accords the MIS unit or section status within the Division and assigns an annual budget allowance for its operation which, although accountable to the Chief of FMD, would be under the control and day-to-day management of the MIS section head, once the budgeted amount is allocated.

The MIS unit would also have responsibility for educating/explaining to public and private sector personnel the nature and implications of changes in the cereals policy environment in Kenya over the next few years. In undertaking this challenging task, the unit would need to liaise closely with AIC and DPD in MoA, MoPND, NCPB and MoSM, and key donor agencies to ensure that the major public sector players have a consensual view of the educational and promotional approach.

The major inputs to the MoA/FMD component of the proposed project are similar to those envisaged for the CBS component, namely:

- technical assistance - comprising one long-term expatriate advisor based in the MIS unit/section at MoA/FMD for a three-year period, supported by 14 man-months of short-term technical assistance in areas such as user needs, commodity and market coverage, grades and standards, training needs assessment, training manual preparation and training of trainers. The long-term TA person would be chief-of-party for the proposed project;

- provision of commodities - including computers and software, communications equipment, motor-bikes and spares, scales/measuring tins, training equipment and supplies;

- in-country training of head office and field level staff in market price and market condition data collection, processing, analysis and dissemination, with particular emphasis on district and divisional level training of extension officers in marketing matters and in-country formal training of key junior staff in agricultural marketing and related subjects;

- regional short-course training of MIS unit/section staff in MIS management, and other key staff in agricultural marketing, price analysis, etc., including on-the-job training visits to MIS units within the region (e.g. the Market Development Unit of GRT in Dar es Salaam, Tanzania);

- provision of local currency funds for key operational expenditures associated with MIS activities (e.g. for covering transportation costs at the local level).

In addition to the two major components outlined above, the proposed project will have a Monitoring and Evaluation (M&E) component which will be more specifically focused on monitoring and evaluating the impact of the project and associated USAID and GOK initiatives (i.e. rural road rehabilitation, reform of cereals policy and regulations) in the six KMDP districts. The M&E team will comprise short-term expatriate T.A. advisors and a Kenyan market research firm. The latter will focus on providing the "ground truth" to confirm the veracity and usefulness to users of MIS "products" emanating from MoA/FMD and other GOK ministries and agencies (e.g. NCPB and MoSM).

The project would, finally, provide operational funding for AIC to meet the additional dissemination costs associated with extended MIS coverage. The major cost would be radio airtime, but provision would also be made for media campaign costs (newspaper, leaflets, and stickers), monitoring of newspaper and radio output, pretesting of media material, limited video and TV coverage, and revamping of AIC equipment.

7.5 Relationship of proposed project to other major donor and GOK Activities

The MoA is well supported by donor-financed projects in key activity areas that are directly relevant to the successful implementation of the proposed MIS project, namely:

- IBRD/IFAD is completing the financing of Phase I of the 'Kenya National Extension Project', a project which has provided support to the Department of Agricultural Extension for incremental staff, vehicles and equipment, incremental operating costs and allowances, staff training, technical assistance, monitoring and evaluation, and support to adaptive research. Phase II of the project is expected to become effective before the end of 1990. The project does not have a strong focus on marketing extension and IBRD staff viewed that the proposed MIS project would directly complement Phase II activities;

- ODA provided support to the institutional strengthening and on-going activities of AIC throughout the 1980's and will continue to do so into the 1990's in conjunction with IBRD. Both donor agencies consider that AIC has a pivotal role in information dissemination to the farming community and, indeed, for the proposed project, AIC will be the principal extension link with traders and larger-scale farmers via the daily wholesale market broadcasts, farmers in general for the dissemination of information on policy changes and their implications for staple food crop marketing, and will provide an important design input in marketing extension materials conceptualisation and production;

- GTZ has provided long-term support to the FMD of MoA in farming systems research and development and will continue its project with the Division until the mid-1990s. Farm level surveys are undertaken to ascertain input prices and usage and some limited information on marketing and farm prices is collected. The GTZ project includes a modest institutional strengthening component at the headquarters level.

- FAO was the instigating donor agency responsible for providing financial and technical support to MIS activities starting in the late 1970's and terminating in the mid-1980's. A follow-on project 'Agricultural Marketing Extension Services Development Project' (KEN/84/006 FAO) was not implemented because of financing problems both for FAO and GOK. The emphasis of the project was to have been on building marketing extension capability in DOA at the district level and below. The project design team recommendations on AMIS (the acronym chosen for the MIS in MoA i.e. 'Agricultural Marketing Information Service') are consonant with some major elements of this proposed USAID-financed MIS project, namely:

  - "improve consistency and accuracy in price reporting;
  - increase market coverage;
  - introduce a market news service for traders on sources of supply;
  - identify more appropriate times for daily radio program on market prices and conditions;
  - investigate demand among district agricultural staff for weekly market information bulletins;
  - explore opportunities for publishing market news reports in Kiswahili on the radio and in the newspapers;
  - improve collection and analysis of open-air market prices for food grains."

    (Marketing Development Project Phase II, Kenya, 'Project Findings and Recommendations", AG:DP/KEN/78/006, Terminal Report, FOA, 1985, p.13.)

- as part of its major development project initiative ASAO II, IBRD has a 100 million dollar plus package (including agricultural extension - see earlier) that focuses on five major areas: maize - where the objective is to improve smallholder productivity in maize production: fertiliser - to strengthen national fertiliser management capacities and promote fertilizer usage by smallholders; vulnerable groups - to assist low income groups vulnerable to economic and physical shocks; public investments and expenditures - t, increase allocative efficiency of public investment resources to enhance agricultural growth; and a major monitoring and evaluation component that will seek to measure the extent to which the IBRD package together with other donor projects, reduces price variances and increases overall price correlation for staple agricultural crops in Kenya. The M&E component will perform an essential function in tracking the impact of cereals policy reform on, inter alia, open market prices for maize. The proposed project could provide a very important service to the overall M&E effort through supporting the rehabilitation and refining of the Agricultural Statistics Section of CBS and FMD/MoA price data services.

8. AN ACTION PLAN FOR STRENGTHENING MIS

This section lays out in detail an action or implementation plan for strengthening agricultural market information systems and services in Kenya. The action plan reflects user needs and expressed preferences (see sections 4 and 7) our assessment of existing institutional capacity (see sections 3 and 6), attention to longer-term sustainability of a MIS (see section 4), and budgetary constraints facing the GOK.

8.1 Overview of principal components

The principal components of a user-oriented MIS are as follows:

- initial survey of user needs and preferences, and periodic monitoring of user assessment of the effectiveness of the MIS in meeting those needs;
- consistent, accurate, reliable and timely collection, processing and analysis of price and market information for key staple and horticultural products;
- publicizing and interpreting GOK policies and regulatory measure affecting staple crops (especially maize and beans) using traditional (field extension officer message) and innovative (radio extension broadcasts) dissemination means;
- formulating and implementing an effective media dissemination strategy;
- careful timing and phasing of improvements in the user-oriented MIS in order to strengthen the system and services incrementally, build upon successes, rethink and modify the system in response to setbacks, train staff in formal workshops and on-the-job, and develop sufficient institutional capacity to sustain an effective MIS over the long term;
- periodic outside evaluation of MIS operations and performance in reference to clearly defined and fair criteria.

These critical components are discussed in turn below.

8.2 Survey of user needs

Potential public and private users need to be queried in the initial phase of implementation about their information needs, preferences as to geographic* and commodity coverage of the MIS, the most useful transactions level for reporting prices, their preferences as to volume/supply information, and various dissemination issues.

The study team has discussed information needs with representatives of the public sector and can confidently recommend a limited number of dissemination strategies for satisfying the needs of policy-makers and analysts. GOK analysts and representatives of donor agencies would receive monthly or quarterly or perhaps semi-annual bulletins, which would provide analysis and discussion of price trends and seasonality and overall market conditions.

The survey of private sector market information needs would focus far more on format, coverage and means of dissemination. Private users are generally not interested in monthly and quarterly bulletins that discuss historical price movements/levels and market conditions. Some of the more sophisticated and literate traders and milling companies would probably be interested in up-to-date price reports with discussions of likely future market development. Written material explaining changes in policies and regulations changes in policies and regulations would also be suitable. Most private users would, however, receive public market information most effectively via radio. The survey of user needs would address these dissemination issues in detail (the proposed dissemination strategy is detailed in sub-section 8.5 below).

The findings from the user needs survey would be the basis of the MIS design and implementation strategy. It will, of course, be impossible to satisfy everyone, particularly the full range of wholesale traders (who tend to specialize in one or a handful of commodities). Strategic choices will need to be made by GOK agencies, particularly MoA/FMD, that implement the MIS in collaboration with contract advisors.

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* Formal procedures and guidelines for classifying markets heirarchially are outlined in Annex 9 within the context of the KMDP rural roads program.

8.3 Market information

This sub-section discusses preliminary findings and conclusions from interviews with public and private agents, which will shape the design and implementation of the MIS. These findings will be subject to further empirical verification during comprehensive user needs survey.

Data collection needs and tasks

CBS Needs

CBS collection of retail price data for nine key commodities in 64 markets will be revitalized through the following measures:

- critical review of existing geographic data collection points with an eye towards dropping sites in districts with three or more locations and adding sites in districts with no coverage. Key criteria influencing these choices are the size of the district (area, population), distance and road condition between sites in districts with multiple collection points, and the extent to which a district is perceived to be chronically deficit and worthy of close price monitoring for food security purposes. Equally, monitoring of food surplus areas would be useful in assessing the impact of liberalisation measures on producers, whether it is a KMDP District or not.

- participation of CBS statistical officers and enumerator in a national workshop to discuss:

  (1) Methodological issues, such as grades and standards, numbers of observations per commodity, timing of market data collection (early, mid, late market day), and choice of informant (seller, buyer or both).

  (2) Current constraints to data collection, processing and transmission.

  (3) Supervising and verification shortcomings and needs.

  (4) Choice of data collection points and suggested modifications.

  (5) Needs for further operational funding.

  (6) A strategy for revitalizing CBS retail price collection.

The study team recommends the following, although the implementing agents (CBS statistical officers and enumerators) will need to be consulted in the workshop and may propose changes.

(1) Retail prices continue to be collected once a week, on a major market day, in the sample of CBS markets. Fair, average quality (FAQ) needs to be clearly defined for each of the nine commodities and grade/quality deviations need to be noted as observations on the retail price collection form. The three observations per commodity could be timed as follows: one early in the market, one during the period of most intense market activity, and the last late in the market day. The second price could be reported as the modal price, which be supplemented by information on the price range (lowest observed price - highest observed price). Note that reporting the prices in this fashion would require modification of the CBS retail price recording form, in use since 1978. Other CBS market forms designed under the FAO funded Marketing Improvement Project should be abandoned, since they are currently filled out irregularly and inadequately, and data collected have never been processed or analyzed. The key objective of the CBS revitalization program should be to strengthen ongoing data collection methods, make strategic changes in methodology at the margin, improve CBS capacity to process and report retail price data to public users on a more timely basis, and not to burden CBS enumerators with a lot of additional responsibilities in collecting market information. The CBS enumerators are charged with multiple tasks, as elaborated in section 3, and it is unrealistic to expect them to focus undue attention on retail price data collection.

(2) CBS enumerators need, in some cases, to replace scales and volumetric measures, and operational funds for taking public transport to retail markets and for per diems for days that they collect market information away from their home base. Raw data (the actual price recording sheets) should be reviewed by the district statistical officers (DSOs) and mailed on to Nairobi. Sufficient operational funds need to be provided to cover mailing expenses.

(3) DSOs or other supervisory staff will need operational funds for making surprise checks on enumerators periodically in different markets to see that they are doing their job properly. Public transport should be used, unless it is not practical. Depending on local circumstances, funding could be provided for a limited number of motorbikes and spare parts.

(4) The CBS sample of data collection points should be expanded, despite pressure to intensify data collection at the district level. After subtracting some points (from districts with more than adequate coverage) and adding others (in uncovered or undercovered districts), the net effect might well be a slight reduction in the number of collection points.

(5) Additional operational funds need to be provided at the national level to hire staff to verify incoming raw data and prepare it for data entry. Spot checks by a national supervisory statistical officer to selected districts are also desirable and would require supplemental funds for public transport and per diem.

(6) With the additional operating funds and supervision, data collection should improve in its frequency, accuracy, consistency and reliability.

. Periodic training workshops, held perhaps annually at the provincial level and organised using technical assistance, for DSOs and CBS enumerators.

MoA/FMD Needs

It is strongly recommended that MoA/FMD follow a similar process to strengthen data collection as CBS, although most MoA/FMD marketing officers and enumerators at the district level and divisional agriculture officers and extension agents are starting at a lower level of expertise than CBS field staff.

In the process of frequent change of institutional home, wholesale market price collection has suffered a great deal. As discussed in depth in section 3, there appears to be no manual of operations for data collectors and supervisors. Transaction level is poorly defined; in some cases retail prices may be collected instead of wholesale prices. Commodity coverage is variable; it is not clear whether gaps in data for individual commodities are due to no supply on the market (not available) or enumerator fatigue or discretion. Units are not always clearly defined and tend to be volumetric. Using a volumetric measure such as a bag or a debe may be acceptable for a relatively homogeneous commodity, such as maize or a specific type of beans, but it is not acceptable for most horticultural

products. As an example, kale in the wholesale markets of Nakuru, Nyahururu and Nyeri is sold in 3 - 4 different size bags. When shipped on to Nairobi or another major urban market, different size bags may be combined (sewn together) in oversized bags. Clearly, without reference to some standard, uniform volumetric unit, such as a particular type of bag used widely in the trade, or by failing to express prices in per kilogram terms, cross-market comparisons of prices become meaningless, if not highly misleading.

Above and beyond the methodological problems, MoA/FMD collectors of wholesale price data appear unmotivated and disinterested in how the data might be used. This is largely a function of little or no training, no standard operations manual, limited if any supervision, and no feedback on the quality or utility of collected prices.

Problems of this magnitude call for a drastic overhaul. Rather than initially convening field staff for a national workshop on data collection procedures and problems, the whole system needs to be revamped. The first step is for the Marketing Unit of MoA/FMD at the national level, in collaboration with a long-term contract technical advisor, to draft a detailed manual of procedures for field staff. The manual will need to cover the following issues:

- purpose of wholesale price collection and the usefulness of market information in policy analysis and in informing farmers and traders of market conditions and opportunities;
- market selection and commodity coverage;
- clear definition of wholesale transaction level;
- procedures for price data collection, including numbers of observations per commodity, timing during the market day of observations selection of transactions/informants to sample, how to report trade/varietal differences, how to weigh or use a standard volumetric measure to record weights accurately, and which prices to report (e.g. average, modal, range);
- procedures for collecting any data on volumes of produce offered for sale, or alternatively quantities arriving at or shipped from the wholesale market; and
- type of supplementary information on market conditions to look for and how to report it.

The manual should also establish clear and simple standard operating procedures (SOPs) for the following:

- obtaining travel monies and allowances
- data verification at the district level and transmission to higher MoA/FMD levels;
- ways in which price data collected at the divisional and district level can be processed manually and disseminated via extension officers to local farmers and traders; and,
- ways in which price data collected at the divisional and district level can be analyzed simply and effectively and incorporated into local extension messages.

A classic example of a SOP that undermines the operation of the price collection program at MoA/FMD was described by one assistant marketing officer in Nyeri. In order to obtain travel monies to visit the largest market in the Nyeri District, the officer had to request funds market visit by market visit. Assuming the officer would be willing and able to visit Karatina twice a week during the course of a month, 8 - 9 separate transactions would be required to get the KShs 30 round-trip travel allowance for each visit. Given the paperwork requirements and the usual approvals and signatures needed to get this small sum, it is no wonder that the officer does not visit the Karatina market. This is unfortunate, because Karatina is not only the most important market in Nyeri District, but it is also a nationally important horticultural assembly market, visited regularly by large-volume wholesalers from Nairobi. This vignette also represents accounting overkill; requesting travel funds for an entire month at the beginning of each month would ensure accountability, yet greatly lower administrative and transactions costs.

Once the operations manual is drafted, it should be reviewed in Nairobi (e.g., MoA/DPD, CBS, USAID, others) and by MoA/FMD staff at the district and divisional level. Written feedback should be requested within, say, a one-month period. Marketing officers from key districts (such as KMDP districts or districts with regionally or nationally important wholesale horticultural markets) could then attend a workshop in Nairobi at which the operations manual is critically reviewed and finalized.

After finalizing the manual and disseminating it to all marketing officers at the district level, a second workshop would be held at the national level. This would be organized and managed by MoA/FMD staff in Nairobi in collaboration with selected, experienced field staff. Using the best field staff to present the new data collection SOPs would be a good training strategy. Not only would it build their confidence, but it would ensure that the training were as relevant and sensitive to field staff needs as possible. The study team believes that several MoA/FMD staff encountered in the field would be suitable as trainers. Prior to the national methods and procedures workshop, field staff selected to give presentations and lead workshop sessions could receive training from a short-term advisor who specializes in "training of trainers". Such a mini-workshop would serve several purposes, including general strengthening of leadership, training and extension/presentation skills.

After the national workshop, the district marketing officer (DMOs) would convene field staff at the district level to provide training. Anyone collecting price data in MoA/FMD would receive a copy of the manual. The DMOs would follow up with frequent field supervision to ensure that data collectors were properly following MoA/FMD procedures. DMOs would carefully review and verify price collection forms and provide feedback to collectors. The DMOs could also be trained in simple manual processing and analysis of price data for local dissemination and incorporation into extension messages. This activity would probably also require additional training. A national workshop or provincial level workshops could be organized for DMOs by the MoA/FMD head of the Marketing Unit, Nairobi. Such a workshop would probably be best held during the second year, after the data collection procedures were being effectively implemented.

As discussed in section 5, the study team strongly recommends that wholesale price and volume data collection be focussed on maize, 2 - 3 types of beans, some 4 - 5 vegetables and some 4 - 5 types of fruit. The current MoA/FMD system covers far too many commodities, and also errs in insisting that divisional agriculture officers come up with monthly average prices for each division. Effective collection of wholesale prices for a maximum of 12 - 14 commodities in, say, two important wholesale markets at the district level would be a vast improvement over the current system, generating far more usable information than the district level monthly averages of divisional monthly averages (across weeks) currently mailed to Nairobi.

Data processing procedures

CBS Procedures

Currently, all weekly CBS retail price reports are mailed to the Agricultural Statistics Section of CBS in Nairobi. Price data for the nine agricultural commodities are entered into a DBASE 3 micro-computer data base. Monthly price listings of average weekly prices are printed out by commodity. Verification of entered data is currently the responsibility of the Head of the Section. Given his heavy management and administrative load, he is unable to devote much attention to this task, so verification, further processing, analysis and dissemination of CBS retail price data greatly lags collection and data entry. Clearly, the verification task would be better delegated to a junior economist/statistician in the Section. The Head of the Section is aware of this, but he has faced frequent staff turnover.

In addition to data verification, data processing skills are in short supply. Computer programmers have a lower status in the CBS hierarchy than economists and statisticians. Their pay scales are also low relative to those programmers in the private sector. Competent programmers trained in CBS tend to get bid away by private firms, banks and parastatals. Staff turnover is frequent, and the cycle of training a programmer up to the point where she/he can make a real contribution is repeated at regular intervals. A top priority institutional issue is to require the MoPND to approve a new scheme of service for computer programmers at CBS, at least comparable to pay scales for economists and statisticians. This would probably ensure greater continuity in processing data.

In addition, the use of a relational data base management program to handle price data merits discussion. While a program such as DBASE is useful for handling and sorting large numbers of records containing alpha and numeric data, such as rosters, mailing lists, or lists of employees or clients, it is not the ideal choice for processing and analyzing price data. The statistical capabilities of most data base management programs are limited, and report facilities are cumbersome for non-programmers. While the talented programmer is able to program DBASE to generate virtually any type of output, using DBASE or a similar program for price analysis becomes highly dependent on the scarce resource of competent programmers.

Interestingly, mastery of data base programs and concepts is very attractive to the private sector, which uses programs such as DBASE to do the very things that they were designed to do best, such as handling and sorting of large numbers of records of mixed alpha and numeric data.

The alternative to DBASE is a comprehensive statistical program such as SPSS/PC+ or PC SAS. Both programs are adaptions to micro-computers of powerful statistical packages developed for mainframes. Each program has been available in micro-computer form since the mid 1980s. Bugs have been worked out and the programs have become increasingly user-friendly. SPSS/PC+ has developed an excellent data entry module, which allows the user to customize data entry forms (which can be made to look exactly like a questionnaire or price reporting form or to use a LOTUS 1-2-3 row and column grid-like format. Once data have been entered into a SPSS/PC+ system file, they can be transferred to LOTUS, DBASE or virtually any other spreadsheet, data base or statistical program that accepts ASCII files. Sophisticated analysis of time-series data can be done using specialized programs such as TSP, GAUSS or M-STAT. One of the advantageous features of SPSS/PC+ is its capability to aggregate data. Aggregation is useful in calculating mean monthly prices from weekly price data (for a specific market) or mean monthly prices for, say, a district (region) from the mean monthly prices for each market (district) in the district (region). In other words, data can be aggregated across time or space. The aggregation procedure in SPSS/PC+ is straightforward and user-friendly. With a few simple commands, a good deal of programming necessary to aggregate the data is avoided.

By converting DBASE files of historical CBS price data (dating from January 1986) to SPSS/PC+ and switching to SPSS/PC+ for data entry, processing and analysis, the Agricultural Statistics Section of CBS would likely improve its data management. The data entry module enables the user to develop custom data checking procedures. Range checks and specification of legal values in the data entry module can eliminate many of the common key-punching errors (extra digit, illegal value) at the key-punching stage. The program will signal (beep) the operator to re-enter the correct information. Illegal or out of range values are not even allowed to be entered in the data base. Once data have been entered and a SPSS/PC+ system file created, simple to very elaborate data checking rules can be developed to capture less obvious errors in data, such as too large a magnitude change of price for a given commodity in a market from one week to the next, too wide a disparity between prices in nearby, well-integrated markets, or too many successive weeks of

the same price or prices within a very narrow range (for a commodity at a specific market). Whether or not errors are discovered in the data, such data-checking rules give the user a powerful tool with which to detect possible errors. This at least forces the thoughtful analyst to go back and look at the data for possible error (and possibly follow-up with questions to be fielded or spot checks on enumerators producing suspect data). In the final analysis, using SPSS/PC+ data entry checking rules would lighten significantly the burden of CBS analysts, who are currently forced to manually verify price data for consistency and accuracy.

From a management standpoint, shifting to a statpack like SPSS/PC+ may reduce staff turnover among programmers. While mastery of a data base management program is attractive to a number of private sector firms, they are unlikely to need programmers whose main expertise is in statistical analysis. Private firms in Kenya probably have no use for a software program that performs statistical procedures, such as correlation and regression analysis, ANOVA, descriptive statistics, breakdowns and aggregation. Since mastery of statistical packages is not readily transferrable to private firms, CBS would likely be better able to retain trained programming staff.

In order to switch to SPSS/PC+, one or more short-term consultancies of a computer programmer or economist well-versed in the program would be required to provide training to CBS staff (preferably for both programmers and economist/statisticians).

MoA/FMD

Data processing skills at MoA/FMD are well below those at CBS. There are fewer skilled programmers and data entry operators, and overall a far lower level of computer literacy. The Marketing Section has access to one micro-computer (XT clone), which is used to enter wholesale price data into a data base management program called PANACEA. This software is not used widely, and it is not suitable for statistical analysis. No one at MoA/FMD appears to have any expertise in using the program for any task other than data entry. The study team recommends that MoA/FMD transfer all data files to SPSS/PC+ or a similar statistical software package. As in the case of CBS, training in SPSS/PC+ will be necessary for MoA/FMD staff in Nairobi. Yet probably before such training can be effectively conducted, MoA/FMD staff will need to receive more basic training in micro-computer use in the MS-DOS operating system. Two to three short-term consultancies (expatriate or local) will be required to train up staff to the level of computer literacy prevailing in CBS.

Data processing procedures appear to be less well-defined at MoA/FMD than at CBS. An important part of the task of a long-term advisor to MoA/FMD would be to develop better and more systematic procedures and train staff in Nairobi in their implementation. A precondition for effective data processing will also be standardization of data recording forms sent to Nairobi from the field. Using the data checking capabilities of SPSS/PC+ will provide more routine verification of entered data, which is badly needed. MoA/FMD staff in the Marketing Division in Nairobi will need to be sensitized more to the importance of effective verification procedures.

Data analysis needs and tasks

CBS

Data analysis of retail prices was lagging data collection by over three years as of this writing. Price data were last reported in bulletins disseminated by CBS for the last quarter of 1986. Analysis in price bulletins is limited to descriptions of price movements from one month to the next or relative to the previous year and perhaps calculation of percentage changes. Price data are not plotted over a long enough time-series to be able to see price seasonality and trends. Matrices of pairwise correlation coefficients for maize and bean prices for nine markets, generated from monthly average prices for the period January 1977 to December 1984, appear in a paper contributed to the Kenya Symposium on Statistical Surveys, held in September 1988.*

While the GOK is sensitive about releasing retail price data during periods of food shortages, when prices are high, there appears to be little interest in price behavior during years of average to good harvests. MoA/DPD expressed little interest in CBS price data and claimed that it was not available for dissemination. Other GOK agencies also claim that CBS jealously guards its data. The truth is that the Agricultural Statistics Section of CBS is so far behind in verifying and processing price data and so burdened with other demanding survey work (Crop Forecast Surveys, the Agricultural Production Survey, annual Economic Surveys of Kenya) that it cannot respond to requests for data. Furthermore, the Director of the Agricultural Statistics Section is a perfectionist trained under the FAO Marketing Improvement Project who is hesitant to release data that he has not personally verified.

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* See J B Kirimi, "Crop Production Forecasting and the Role of Prices in Agricultural Development," in Kenya Symposium on Statistical Surveys, Republic of Kenya, CBS/MNPD, pp.103/111

Generating demand for CBS retail price data should not be very difficult, as it is the longest, uninterrupted time-series for nine staple crops in Kenya, and its quality is regarded as higher than that of the MoA/FMD wholesale price data. What is needed is technical assistance to retrieve price data from 1977-1985 on a mainframe computer tape, download it to a micro-computer software package, such as SPSS/PC+, and transfer in the 1986 - 1990 price data from DBASE to create a fourteen year plus time-series ready for analysis. There are reportedly data gaps for certain months and missing weekly values during some months. These problems are not likely to be insurmountable in all cases but do need to be acknowledged in any analysis of historical trends, seasonality and intermarket integration (correlation).*

Careful, well-presented analysis of the historical retail price data would be of interest to a number of GOK and donor agencies. They could also serve in part as a baseline against which price behavior during, and after, the period of staple crop policy and regulatory reform is compared. CBS has collected informal market retail prices for four scheduled crops since 1977: shelled maize, beans, sorghum and finger millet.

The impact of removing movement controls and the progressive freeing up of maize, bean and coarse grain markets on consumer prices will be of interest to GOK policy-makers and analysts and donor agencies underwriting the reform program. Now KMDP is approved and USAID makes significant investments in rural roads in six districts of Kenya, before and after comparison of retail prices in CBS markets in those six districts should reveal greater integration of prices (higher correlation coefficients) and less price variability within and between markets.

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* At a minimum, values can be interpolated for missing months from adjacent months. Alternatively, a more complex algorithm taking historical seasonal trends into account in generating missing values could be developed.

In order to monitor the impact of policy reform effectively, CBS will need to process analyze and disseminate its retail price data in quarterly or monthly bulletins and on a timely bais. The CBS data will never be broadcast over the radio, but they should be disseminated monthly (ideally) with a lag of about 1 - 2 months. Semi-annual or annual reports analyzing seasonal trends and comparing price levels and seasonality with earlier years could be distributed to interested analysts who wish to look beyond the level of current prices. The level of retail staple crop prices in Kenya relative to world prices, or more precisely import parity prices, would be informative for MoA/DPD, which advises the GOK on the level at which "scheduled crop" reference prices are set.

MoA/FMD Data Analysis

While CBS has historically been the analytical unit and MoA/FMD the service oriented agency, MoA/FMD will need to strengthen its analytical capability in interpreting wholesale price and volume information. Data analysis in preparation for radio broadcasts of current wholesale prices for key staple and horticultural crops in major urban markets will necessarily be minimal. Description of recent market developments, particularly factors underlying changes in supply/demand conditions, is all that is appropriate for radio dissemination.

As wholesale price data collection is effectively upgraded beyond the national wholesale markets, analysis of district level wholesale prices would be useful for MoA/FMD in estimating gross returns to alternative cropping enterprises using real prices. Performing sensitivity analysis of returns to the same enterprise for harvesting during different months would be instructive to FMOs, extension agents and farmers, who are of course all aware of price seasonality but who might be able to make better informed production and marketing decisions with better market information. The key to using district level market information effectively is for DMOs to retain control of the wholesale price data. Because performing data analysis at the national level would tend to average out local differences and hence be of less utility to farmers facing a particular set of resource endowments and production conditions, it would be desirable that data analysis be done at the district level to be interpreted most usefully for farmers in Kenya, who produce crops in a wide agro-ecological range of farming conditions (with respect to rainfall, temperature, altitude, slope and soils). This would enhance the utility of market price data for small farmers.

Private traders and millers would probably not be interested in printed price bulletins generated by MoA/FMD. The information would be historical and would do little to tell private agents what the price of commodity x is likely to be next week or next month. Over time larger, more sophisticated wholesale traders and large mills might be interested in analysis of price trends, seasonality and inter-regional differences as background information useful for fine-tuning their buying, storage, processing and sales decisions. Such an interest is likely to be a long time off, however.

In the short term, NCPB would be interested in MoA/FMD prices for staple crops, particularly maize, in order to crosscheck its own internal sources of market information. MoSM would also take an interest in MoA/FMD periodic bulletins as part of its food supply and marketing monitoring mandate. Resource constraints will probably impede MoSM from mounting an effective market information system.

8.4 Publicizing and interpreting regulatory and policy changes

Clarifying ambiguous rules of the game

There is a pressing need for the GOK to clarify ambiguous rules of the game in the staple food crop trade. Even as the GOK, with significant donor assistance, is progressively liberalizing the maize trade, there are government officials who told the study team that it is illegal to announce informal maize market prices. This appears to be patently counterfactual, as the GOK recognizes the informal maize trade, permits movement of limited quantities of maize across district lines without permit and will provide permits for movement of larger quantities.

The worst enemy of the private trade is uncertainty as to government policy and unpredictable application of government regulations. Uncertain, arbitrarily and intermittently enforced policies and regulations undermine private incentives to invest in improved transport, storage, processing and marketing management. The failure of informal traders to achieve scale economies in the maize and bean trade, with attendant negative welfare effects on producers and consumers, has been well-documented (see Annex 2, Booker Agriculture International and Githongo Associates, 1983 and DAI, 1989).

Formal mechanisms for approving dissemination of policy changes

As a GOK/donor consensus on the magnitude and rate of staple crop marketing reform continues to sharpen, a formal mechanism for drafting, reviewing and approving dissemination of information on policy and regulatory reform needs to be developed. Staple food crop policy is highly sensitive and highly political in Kenya, and the implementing agents of the MIS (CBS, MoA/FMD and MoA/AIC) are understandably cautious about overstepping their bounds.

As proposed in section 7, probably the best-placed official body for developing the language about the extent and nature of policy/regulatory reform that gets disseminated in newspapers, extension bulletins and over the radio is the CSRP Technical Committee. The committee meets regularly to review progress in achievement of CSRP objectives. Both GOK and donor representatives sit on the committee. After drafting and approving information about the market reform program, the CSRP Technical Committee would submit the draft to the OP for review and approval. Once the OP signed off, the information could be broadly disseminated.

Dissemination media and format*

In addition to informing the Kenyan public of policy reforms, extension messages could be targetted more directly to wholesale traders and farmers via the weekly market summary radio broadcasts. MoA extension agents could receive written statements and explanations of policy/regulatory changes from MoA/FMD, with additional comments on how to convey this information to farmers and traders.

Periodic seminars, organized by MoA (probably DPD), could also be held for mid-level GOK officials working on agricultural development and policy issues. Implications of recent changes and critical interpretation of potentially unclear reform measures could be discussed. To the extent that ambiguities could not be resolved, they would be referred back to the CSRP and OP. This would serve to raise the level of comprehension of CSRP (and KMDP) objectives among public officials, who in turn would be able to communicate the intent and scope of GOK reform efforts to junior and field staff and the private sector.

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* Dissemination media and format for communicating policy change as well as wholesale price data are described in greater detail in sub-section 8.5 below.

Feedback from public and private participants in the food system to policy-makers

As noted above, periodic MoA/DPD seminars would provide a forum for providing formal feedback on policy/regulatory reforms to the GOK and CSRP. The senior DPD coordinator of this activity could serve as the rapporteur, communicating questions and comments to the CSRP Technical Committee or to the OP orally or in writing.

Feedback from farmers and traders could be passed up from divisional agricultural extension officers and district level DMO, to the DOA and on to MoA/FMD headquarters in Nairobi. Private sector questions and confusions could be addressed in the end-of-the-week market information broadcasts or answered via prepared extension messages communicated orally in the field.

8.5 Media dissemination strategy

Background

The Agricultural Information Centre (AIC) first became involved in providing current market information in early 1982.

Press

The arrangement for placing fruit and vegetable prices in the press was established at this time and Nation Newspapers took up the responsibility of publishing prices the day after they were collected from the market. The Kenya Times followed. The Standard commenced publishing the tea and coffee prices on Saturdays about four years ago. The AIC for two years ran a full page "Farmers Information and Letters" feature published opposite the prices graphs. The AIC staff were informed in early 1989 that a redesign of the paper would no longer allow publication of this feature although the letters received indicated that it had a regular and enthusiastic following.

Radio

A daily radio program was broadcast every weekday covering prices provided by the FMD from 1982 - 1989. The program was called "Bei Ya Mboga" or "News of Vegetables" and went out on the air at 1.30 p.m. daily for 5 - 8 minutes. These prices were from the selected markets reported the same morning to the FMD

and then collated and delivered to AIC by 10.30 a.m., recorded at the AIC studio and in turn delivered to VOK (now KBC). There was at first an attempt to provide useful commentary and some idea was given on the general and future market. However the quality of this commentary gradually tailed off until ultimately it consisted of, at the most, highlighting one or two crops, a brief weather report and comment on road conditions.

The major lesson learnt from previous attempts at MIS media dissemination was that its success depends critically on the quality of content and commentary and its regular appearance.

Existing market information dissemination out of AIC

The AIC in conjunction with FMD currently provides a limited but regular market information service using radio and press to inform the public.

Present situation

At the moment the data is collected from ten markets around Kenya covering some 28 crops. These include maize (green) and potatoes, nine fruits and the major vegetables, including sukuma wiki, cabbages etc. There is no mention of the various beans, dried maize or other cereal crops.

The data is phoned or telexed in to the Nairobi office where a form is filled by hand. Two towns are telexing in the information at the moment and the others use the telephone. The FMD prefers the phone as it allows the interviewing of the price reporters; there are, however, some towns unable to report as they have not paid their phone bills. A short commentary is then provided by the Nairobi office.

Press

Some of the material is sent down to the press daily (Nation and Kenya Times). They publish a day-after list of prices for a set number of horticultural produce from two markets (Nation) and four markets (Kenya Times) free of charge in both papers. The information is published in the business news section. It is not clear who this is aimed at: shopper, producer or trader. This service is not always reliable, as the editor will not print some data in order to save space for other articles. There are also occasional announcements regarding cereal prices which appear in the press. These will appear anywhere in the paper and there is occasional comment in the business section.

Radio

A list of average prices from ten markets and simple commentary is taken to the AIC weekly for broadcast on radio. The HCDA also provides a regular weekly list of export prices covering major exports into UK, France and Belgium and includes a short commentary. This is taken to AIC for the weekly broadcast on radio.

The program is called "Nipe Habari" or "Let me know". This program is 15 minutes long and is produced by one of AIC's two senior radio producers. It is recorded on Thursday and broadcast at 7.30 a.m. on Sunday morning on the National service in Swahili. The slot is A rate airtime and costs KSh 8,000, going up to KSh 10,000 at the end of this month. The AIC, as of 1st July 1990, has this money in its budget and is expected to pay for the service.

The AIC has a 30 minute program broadcast at 5.30 p.m. on Thursdays called "Chalula Kwa Taifa". This program is sponsored by East African Industries and is broadcast on a B rate slot at 9,000/- for the half hour. This is a traditional program aimed at teaching farmers new techniques and also aimed at the young farmers clubs. It also purports to cover population issues. There is no direct price or marketing information although it could be included. The air time is a little early for maximum coverage.

Media potential

Press

The press is willing to publish regular prices and the system is in place to provide them with the material, although as indicated elsewhere it is in need of improvement. The data needs to be accurate and useful to the audience. At present there is little or no regular high quality commentary on the prices aimed at making the service increasingly useful to specific target audiences. The audience needs to be approached with different formats and content of the press MIS. A clear idea needs to be gained of the information they require and how they want it presented so that they can make the maximum efficient use of the material.

Radio

The record shows clearly that the AIC is capable of providing a regular daily MIS on the radio. However when VOK became the Kenya Broadcasting Corporation, and all airtime had to be paid for, the cost of purchasing airtime became prohibitive and was not provided for in the AIC budget. The announcement in 1989 that payment was expected came just after the budgets for the AIC had been approved and allocated.

The AIC has found one sponsor for a weekly half-hour program and this year has been allocated money to pay for one other fifteen minute program which covers a weekly look at prices. A return to daily prices on the radio would require either ad hoc project funding or sponsorship.

The capability to broadcast does not mean that the program is useful or is perceived as useful by the intended audience. For the radio programs to be a success it would be appropriate to conduct a study of the various intended audiences and to test pilot programs so that the production can be geared to the audience's needs. The problems of content and information contained in the program is addressed elsewhere in this report but it is critical that the commentary that goes with these prices is of the highest quality and aimed at satisfying the various audience's information needs.

Other media possibilities

Print

Market information can be found in a variety of published material and provided by difference sources including other government departments.

Market information bulletin

This document was published on a regular basis by the CBS but over the years appears less often, and is, increasingly out of date. The audience needs to be well defined and the publication rejuvenated on a regular, timely basis if it is to be any of use.

Provincial, District and Divisional market reports

Prices are collected from local markets and these should be made available to the MoA and local extension workers. The MoA can use this information for policy and predictions. The extension workers can use this material to allow them to encourage farmers to make changes and plan their farming activities so as to obtain the best returns from their inputs. This service does not require sophisticated production but can be disseminated through the two-weekly T and V meetings.

AIC publications

The AIC produces a variety of publications aimed at extension workers and farmers. These publications include a quarterly newsletter for extension workers, a technical reference handbook, pamphlets and leaflets. The material, however, is not useful for carrying up-to-date MIS as it is published infrequently and becomes quickly out of date.

Kilimo news

This quarterly newsletter is aimed at the 4,500 extension workers in Kenya and is distributed at the district and divisional levels. It would be a useful medium to carry information on the project, new rules and policy, where to find MIS and how to use it in the field.

Handbook for extension workers

The AIC publishes a Technical Handbook covering all the major crops and fruit and vegetables in Kenya. A small handbook covering the uses and importance of using prices to negotiate change with farmers could be produced by the AIC.

Pamphlets/leaflets for farmers

Many titles covering most crops are produced and the AIC is at present updating these titles and adding new ones. Some of these publications remain in circulation for up to ten years. Attempts to include prices as part of the information have been made. The idea here was to show costs, yields and prices for products in an attempt to show farmers the likely profit margins. This type of information is difficult to provide accurately over the different agro-ecological zones and is soon out of date. However the provision of seasonal price variations

and a guide to calculating likely profits would be a useful addition. The farmer could then seek up to date prices in order to maximise his returns. This medium would also be useful to provide information on the availability of MIS and the changes in cereals marketing rules and policy. These leaflets could be distributed by Extension Workers to contact farmers and groups.

Stickers

Stickers with the new market regulations could be printed for traders, transporters and millers to provide easy reference and to serve as an authoritative, unequivocal statement of the prevailing regulations.

Television

There have been no programs made for television which focus on agricultural market prices as it has never been felt that the audience is large enough to justify the high cost of production. This is beginning to change with the increased distribution and number of sets. (KBC estimates 250,000 sets, of which 219,000 are in African households; this represents approximately 5 percent of total households).

Television is however a useful medium, especially in creating awareness of the project, policy changes and informing the audience of other regular market price services. The insertion of material to the regular news programs at the launch of the project and at regular intervals there after could be very effective. AIC is capable of producing television programs for KBC.

Video

AIC is producing a series of films/videos to train extension workers in communication skills. A video demonstrating the market service and how the information provided in this service can be used by extension workers to negotiate change with farmers would be feasible and potentially very useful.

Direct mail

This has not previously been tried by the AIC. However, if a list is accessible, or could be built up, it could be an effective method of targeting specific audiences such as traders, millers, transporters etc. This could be arranged on a regular basis or a one-off for news of new rules etc.

Phone service

Dedicated lines could be provided at the FMD and the number circulated to interested parties so that they could phone in at any time and make specific requests for information. One line could have a prerecorded message and another (number depending on demand) could provide a live answer service. This would be worth trying and may be of use to traders and large distributors. The use of the service could be monitored and the type of information required by users fed back into the design of content of material for media distribution.

Message, Media and Audience

Message/Media

There are three main messages that require effective dissemination media:

- a regular up-to-date market prices information service;
- information on rules and regulations governing the sale and transport of crops;
- provision of useful information to extension workers to improve their effectiveness in negotiating change with farmers.

The following is a suggested outline of which media are suitable for which messages:

	Medium				
Message	**Press**	**Radio**	**Print**	**TV/Video**	**Baraza**
Wholesale Market Information	****	****	**		*
Policy/rules Changes	****	****	***	**	***
District/ Divisional Extension Workers	**	**	****	***	

Notes:

- Press and radio are important media for all messages.

- Television has a role to play in dissemination on policy matters and regulation changes.

- Video can be used to train extension workers in improving information flows to farmers.

- Barazas are important for making policy changes known, especially in the rural areas.

Media/audience

Looking at the target audiences that are anticipated users of a regular market information service it is again clear that press and radio are the important media.

Message	Press	Radio	Print	TV/Video	Baraza
Farmers					
Large	****	**-	*	*	
Small	**	****	*		*
Traders					
Large	****	**-	*	*	
Small	**	****	*		*
Extension workers	***	**	*		
Millers					
Large	***-	**-	*	*	
Small	**-	****	*		*
Transporters	***-	***-	*	*	
Policy					
GOK	*	*	****	*	*
DC	**	**-	****		
NCPB	**	*	****		

Notes:

**- Indicates a predicted increase in use by the audience if the service is tailored to their needs.

- Radio and press are the most useful media for the MIS because of their immediacy and wide distribution and accessibility.

- Print media are useful for policy makers.

- TV and barazas have a very limited use for disseminating daily MIS but may be used for providing long-term information and prediction.

Audience and message

The project is broadly looking at a Market Information Service (MIS) on a regular basis and an intermittent mass media campaign to inform all concerned of changes in cereals policy and rules (CAMPAIGN).

The Marketing Society of Kenya and market research companies give the following socio-economic audience breakdown. The audiences by classes and their predicted uses of the two proposed messages are shown below:

DESCRIPTION	CLASS	% POP	MIS	CAMPAIGN
Large Farm owner Senior manager Senior Govt Officer	AB	4	**	****
Med. size Farm Owner/Mng Junior/middle manager Business owner Foreman/technician	C1	21	****	****
Small farm owner Small Business owner Skilled manual worker Extension worker	C2	30	****	****
Small plot (some cash crop) Semi-skilled worker	D	30	***	****
Subsistence farmer Unskilled labour Casual labour	E	15	*	**

Notes:
- All groups needs to be reached by the campaign.
- The groups C1 to D are the most likely users of MIS.
- The group E has reduced in number over the last ten years and D has increased; otherwise there has been little changes in class distribution.

Press and radio distribution strategy

The media of press and radio are assumed to be of prime importance in disseminating the MIS daily and in reaching members of the public in the campaign to inform them of new rules and regulations. The following indicates the number and type of audience likely to be reached by the two media and comments on their specific uses.

The press

There are three publishers with the following output. Some papers already provide distribution of MIS and other are willing to.

Publisher/Paper	Circulation '000	Publish MIS/prices	Willing To	Target Audience
Nation Newspapers				
Daily Nation (eng)	180	Yes		ABC 1C2
Taifa Leo (swa)	50	-	Yes	C2D
Sunday Nation (eng)	185	-	Yes	ABC 1C2
Taifa Jumapili (swa)	43	-	Yes	C2D
Kenya Media trust				
Kenya Times (eng)	60	Yes		ABC
Kenya Leo (swa)	30	-	Yes	CD
Sunday Times (eng)	45	-	-	ABCD
(Sunday) Jumapili (swa)	43	-	Yes	C2D
Standard Newspapers				
Standard (eng)	62	-	Yes	ABC
Sunday Standard (eng)	60	-	-	ABC

Notes:

- 29% of adults claim to have read a newspaper yesterday (RBI 1989).
- Nation has the largest distribution. If one group needs to be used it should be the Nation.
- Circulation figures for Swahili papers have not changed much over the last few years.
- Kenya Times etc are not audited for circulation so the figures are publisher's estimates.
- According to the Nation group, the circulation of the daily Nation is highest on Wednesday and Friday due to the printing of supplements. There is also an additional distribution of the paper to rural areas on Fridays.

Distribution

All the newspapers use more or less the same distribution network and centers. The Nation has the greatest number of rural distribution centers, totalling 15. The Kenya Times which is the youngest of the papers is following an aggressive drive to increase its share of the market and aims for 12 centers by the end of the year. The Standard uses seven.

The Newspapers are delivered to these centers and the further distribution is managed from there. Papers are dropped off or collected from the center, sales made and unsold papers returned and collected and a credit note issued. Every single sale point is therefore accounted for. This system could provide useful information when assessing use of market information in a specific area.

The Nation has the greatest distribution followed by the Standard and Kenya Times. The increase in distribution over the last few years has only affected the English speaking papers. The Nation sells more papers in the rural areas than the Standard or the Times. A break down of sales to rural areas shows that there is a variation in sales to different parts of the country. The Kenya Times has a wider distribution in Western Kenya. It distributes out of Kisumu and in three other distribution points in the area. The data below relate to Kenya Times and Standard distribution (comparable information for the Nation was not available).

Place	Kenya Times '000	Standard '000
Major towns		
Nairobi	25	34
Mombasa	8	8
Kisumu	12	5.5
Rural		
Nakuru		4.5
Eldoret		3
Nyeri		3.5
Machakos		2
Thika		1.5
Meru		-
Bungoma		-
Kisii		-
Kericho		-
	15	14
Total	60	62

Recommendations for press

Target audience

The project target audience of large farmers, farmers dealing with cash crops and excess cereal crops for sale, established transporters, large and medium sized traders and millers, Government officials and agricultural extension workers are all users of the press medium; 25% of adults in Kenya claim to have read a newspaper yesterday (52% of these are in the urban areas).

The papers reach an audience in both English and Swahili covering most of the socio-economic groups in Kenya with an established distribution into the rural areas. The audience however has to be literate and able to afford the paper at KSh 5 to KSh 6 a day. The proposed MIS and campaign target audience fits well into this profile.

Message

The medium has an advantage of being immediate and daily and as it is printed can be referred to and studied at different times. It can also be collected. The Sunday papers allow time for more detailed reading. It is appropriate for disseminating the daily market information, regular commentary on market conditions and movements, and is highly useful for the dissemination of rules and policy changes.

Cost

The papers are all interested in providing space daily for dissemination of prices from various markets and the business editors of each paper have agreed to print a commentary twice weekly (up to a quarter page in the case of the Standard) free of charge. If a guaranteed 13 x 2 cm slot was established, and paid for, the cost on a contract basis in the Nation would be £,994/- per slot. It may be advisable to take a full page or two to announce the projects aims and to advise on new rules, policy etc. and especially to show our target audience how the figures can be used and establish a feedback system. To personalise the service in some way, this may be done quarterly by publishing findings, case studies and correspondence.

Schedule

It is recommended that prices are published daily, Monday to Friday, for the previous day, including all information deemed necessary and without cuts. On Wednesdays and Fridays an extended section would include commentary on the market and special features of no more than a quarter page. Weekly review and comment would appear on Sunday with special features of approximately a quarter page, including annual trends and coverage of specific crops.

Radio

There are at a low estimate three million radio sets in Kenya with listenership at peak evening times (6.30 p.m. - 8.00 p.m.) of at least four people per radio: i.e. 12 million listeners. KBC claim 4 million sets and licences issued. Radio, thus, has the largest reach of any medium and is growing. It also provides an opportunity to target audiences with the time of broadcast and language. KBC radio has three services: national (swahili), general (english), and vernacular (18 languages).

Programme	Listen Afr	Class audit	Overview % Urban	Rural	Male	Female
National Service	41%	ABCD	83	75	81	72
General Service	10%	AB	55	33	46	28
Vernacular	11%	CD	31	56	50	54

National service

The national service would be used to present daily prices and simple commentary on a daily basis either attached to the existing two programs or others. The recommended time is around 7.00-8.00 p.m. for maximum listenership and when the target audience is likely to be at home. It may be considered that the best time to reach traders, transporters, millers etc is in their office but some research would have to be conducted in order to establish the most suitable times for broadcast. For same day prices the earliest the material can be ready for distribution is mid-day. Commentary in detail is recommended three times a week.

A measure of the success of the programs would be the speed at which funding for programs could be sought and agreed with sponsors (e.g. a major advertising client of KBC). Certainly the project should estimate to have sponsors before one year of broadcast is completed. The monitoring of the program through the year should assist in discussions with prospective sponsors.

It may be possible to purchase the airtime and then sell on unused time to another sponsor say 10 minutes of a 15 minute time slot for music or other information at an earlier stage when the program is not full of prices and commentary. KBC approves and would support this plan.

Vernacular

This medium provides a useful method of reaching the rural audiences in their own language. There are also more women listeners than men. There are three regional programs broadcasting the following languages:

Central	Kikuyu, Kikamba, Kimasai, Kimeru, Hindustani.
Western	Luo, Kisii, Luhya, Kalenjin, Kuria, Teso.
Eastern	Somali, Boran, Rendile, Burje, Turkana.

The Central and Eastern programs are broadcast out of Nairobi and the Western are broadcast out of Kisumu. The pastoralists of Eastern Kenya would not be considered a priority audience for the marketing information service. The Western broadcast could be produced in Kisumu and training provided out of Nairobi, or the material analysed and commented on in Nairobi and then telexed back to Western for translation and broadcast.

Schedule

The scheduling of programs is complex but the KBC is rearranging this at the moment in order to allow a fair share of the limited air time. There are programs in seven different languages in the vernacular series every evening between 6.00 p.m. and 8.00 p.m. broadcast out of the Central and Western Region.

If, for example, market prices were to be broadcast and commented on any weekday (say Tuesday and Thursday), at the movement the schedule looks like this:

Time pm Tues and Thurs	Central	Western
6.00-6.45	Kimasai	Kalenjin
7.00-7.45	Kikamba	Teso
8.15-9.00	Kikuyu	Luhya
9.30-11		Luo

These times could not be guaranteed at the moment. There are some existing farming/rural programs in the vernacular service within which it may be possible to place the MIS. This would have to be cleared with the individual producers at the times required.

As with national radio, the airtime rates are for a minimum of 15 minutes. However, the time to read prices and make simple comment could be reduced to 7 minutes. In theory this would halve the cost but would require a specific deal. As with national radio, sponsorship would be sought from outside sources.

Recommended schedule

The recommended schedule would be to broadcast day-after prices on the national service five days a week during the evening prime time and three 15 minute programs for full comment on Tuesday, Thursday and Sunday morning. These would carry MIS and other magazine-style agricultural news.

On the vernacular service, it is proposed to start by broadcasting in two vernacular in each region twice a week focussing on prices, commentary and other news. Attachment would be sought and provision of data on other programs and other languages. Once sponsorship is found a move could be made onto another two languages.

Combined press and radio distribution

The regular MIS information could be distributed in the following manner as seen over a week. This is just one permutation which is the simplest if all slots are to be used. It would be easier to change the press input at short notice at a later date. Further information is required from the audience to identify the most desirable times for radio broadcast.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
All Press (english and swahili)						
	Press prices	Press prices comment	Press prices	Press prices comment		Press prices comment
Radio (swahili and vernacular)						
National						
Radio Prices	Radio prices comment	Radio prices	Radio prices comment	Radio prices		Radio prices comment
Vernacular						
	Radio Kikuyu Kikamba Luo Kisii Prices and comment		Radio Kikuyu Kikamba Luo Kisii Prices and comment			

Other media uses and recommendations

MIS print

There will be a number of opportunities to use print.

Monthly marketing information bulletins (CBS).

These would be made available to policy makers, donors and other major users of long-term price data. The users of this information is unlikely to exceed 200. The publication of this material would be the responsibility of CBS. This would require a dedicated in-house publishing capability and CBS has three options:

(a) Duplicate

Purchase a Gestetner duplicator and binder.

- retype the data onto stencils and duplicate;
- or, purchase a stencil cutter/scanner and scan the computer printout and duplicate.

The CBS has apparently already got a 4194 scanner (four years old) but its condition and quality of print output is unknown.

The new scanner model works at a speed that will produce an exact copy stencil in under two minutes.

Advantages of a system that includes the duplicator and the scanner and cutter are as follows:

- the data is copied exactly to the stencil;
- cheaper paper is used;
  there is less unofficial and casual use;
- the equipment is long lasting and cheap to maintain.

(b) Photocopy

The Rank Xerox photo copier 5030 with its two sided copying, computer print out feed in, two colour for highlight and its sorting capabilities provides a good option for the production of a maximum 200 copies of a 40-page publication. Advantages include an exact copy of the final computer print out, it copies both sides and sorts and stacks.

(c) Publish outside on contract

The cost of this in one year would purchase the duplicating set; it is, therefore, not recommended unless there is an equipment breakdown.

Recommendations

The CBS would have to be consulted as to which system they prefer, but the experience gained at the AIC is that the duplicator is cheaper to run and maintain than a photocopier and quality of print is adequate.

Extension worker guide

In order to improve the use of the MIS by the MoA field workers it is proposed that a simple guide is produced.

The main purpose of this guide would be to encourage the extension worker to use up-to-date market prices and predictions to assist him in negotiating changes with the smaller-scale farmers. The guide may include the following:

- where to find up-to-date market information;
- how to interpret and use it;
- examples of negotiations using price data;
- annual seasonal trends in major crop prices;
- pocket on cover to hold local prices information etc.

This handbook would be produced by the FMD and AIC. A 20-page booklet including illustrations would be produced.

Campaign print

If the campaign to inform the general public of policy changes and the creation of a new MIS is to succeed then a number of print opportunities should be used.

A page press announcement should be provided for, to include all papers and describing new rules and new MIS. This may be granted free by the newspapers, but to ensure the day of publication and position it would be advisable to budget for the space.

Flyers

During the campaign it would be desirable to provide the MoA extension staff with simple single sheet leaflets which they can hand to farmers. The extension workers will have attended a two-weekly meeting where the campaign would be explained in detail by a subject matter specialist. He would go through the flyer in detail with the extension workers and provide them with copies. The impact point for the next two weeks visits to farmers would include explaining to farmers the new rules and the availability of market prices on the radio and where relevant in papers. The extension workers would go through the leaflet and leave it with the farmer. The leaflet would have the rules explained in English and Swahili using simple pretested graphics. Depending on how simple the rules are, it may be desirable to print in vernacular as well. The times of radio programs and other MIS media distribution would be shown.

Stickers for vehicles/stores

The press and radio campaign may announce the availability of a free sticker which can be applied for in writing. This sticker would display the new rules with an official crest. Transporters, millers, distributors could display these stickers on their vehicles and in their stores so that they could be easily referred to and would provide an authoritative source of the new regulatory status quo. A first print run of 5,000 is suggested.

Pretest, monitoring and evaluation

Pretesting

In order to provide a useful MIS it is essential that prototype press and radio programs are prepared and tested with the various target audiences. This will not only assist the FMD in understanding user needs in terms of the information they require but will also allow the producers and designers of the various materials the opportunity to find preferred wording, layout and styles of content presentation.

Radio

It would be advisable to produce the proposed radio programs on cassette tape and playback to various audiences in order to obtain feedback and comment. It would also be possible to try different styles and mixes and obtain some idea of the preferred type of program from specific audiences.

Press

Dummy layouts and information should be tested for audience acceptance and for production and distribution to the press on a regular basis.

Print

The extension workers handbook and the leaflets for farmers should also be pretested so as to ensure they are as effective as possible. Pretesting print material is important as once the printed item is completed there are no ways of changing it until a further print is required.

Monitoring

Radio

The services of Steadman and Associates, or a similar advertising firm, should be hired in order to monitor broadcasts and press coverage. The donor, FMD and AIC are not going to be able to hear and see all broadcasts and press coverage. For radio, Steadman and Associates provide an unmatched facility whereby they listen to and record all radio programs broadcast on national or vernacular radio. They will check whether broadcast went out, if the whole program was aired and uninterrupted. The program will be recorded so that any dispute with KBC that may arise can be supported with evidence. A report on a monthly basis, or as problems occur, is provided. The charges are 3% of total airtime paid for.

Press

Steadman and Associates will also collect daily all MIS material presented in the press and file it so that the progress and quality of the press coverage can be assessed on a monthly basis. This will also provide an accurate record of the MIS provided to the public. A charge of KSh 4 per paper per day has been quoted.

Print

The monitoring of print for extension workers and leaflets and stickers would be conducted at distribution points and would be necessary to monitor stocks and popularity of materials.

Evaluation

Radio

Radio can be changed as the project progresses, and once certain styles have been identified and broadcast, it would be advisable to formally assess the impact and seek advice on changes from the target audience on a regular basis. This activity will go a long way to improving the broadcast and if successful will provide useful material when discussing possible sponsorship. The radio programs should be designed to seek participation from the audience and perhaps should include a letter/letters and answer with each program so as to encourage a two-way flow of information. The presenter can actively seek advice on how to improve the service and this should be encouraged. A formal study of the whole system should be conducted annually.

Press

A similar formal follow-up after the press material has been running should be conducted with the target audience. This could be done at the same time as the radio evaluation.

Print

A formal follow up on the extension workers' handbook should be conducted after three months of distribution, and recommendations for additions and changes developed over three years before a reprint is considered. The booklet will have a flap so that any vital supplementary information may be distributed and inserted along with the local price data MIS sheets that the extension workers would be inserting.

8.6 Project implementation

Pre-operational period

USAID has agreed, in principle, to fund the project outlined above as a component of KMDP. The original timetable for implementation of an effective MIS was December 1990. This timing was, however, based on signing the KMDP agreement with GOK in April 1990. In the event, signing was delayed until the end of July 1990. It is USAID's intention to try to keep to the original schedule. The main pre-operational leadtime, and, therefore, the critical item in meeting a year-end deadline for implementation is in the hiring of long-term expatriate TA. Other pre-operational activities are less critical; capital items could, for instance, be procured locally, subject to USAID regulations concerning duty and tax free status.

One solution to the TA "critical path" would be to initiate the project prior to the arrival of the two long-term technical advisors with short-term TA substituting initially in their roles. Given, however, the relatively short duration of the project and the importance of coordination and continuity in ensuring its effectiveness, this solution is less than ideal and should be discounted. Implementation timing, if necessary, should be revised to allow for a realistic leadtime in contracting expatriate technical assistance.

Operational period

Major implementation steps and activities are summarised below.

CBS data backlog

The initial task for CBS will be to download historical price data to a PC, verify and analyse the data and produce a tabulation of historical price series.

User needs analysis

This main study volume has presented preliminary conclusions concerning the needs of the various potential MIS users. This analysis will require refining at an early stage of project implementation. Of particular importance will be the need for close liaison with AIC in the pretesting of media material with potential users to ensure that proposed media formats are appropriate and deemed useful.

Market coverage

Again, recommendations have been made concerning market coverage. These recommendations will require firming up and agreeing with CBS/ASS and MoA/FMD, not least because the extent of market coverage will determine quantities of certain equipment to be financed under the project. For FMD, market coverage will also include agreed recommendations on grades and standards and transaction levels.

Computer installation/training

The project will provide PCs and attendant software for both CBS/ASS and MoA/FMD. An early task will, therefore, be installation of hardware and suitable training for staff on the use of the recommended software, SPSS/PC+.

Communications equipment

For CBS/ASS this will entail establishing dedicated in-house printing facilities for publication of historical price series and for subsequent monthly or quarterly statistical bulletin production. In MoA/FMD dedicated telephone lines will be installed for transmitting price data to Nairobi from the districts. The exact number of telephone lines required will follow from the analysis of market coverage.

Seminar on price collection

Once the above activities have been undertaken, it is desirable that head office and field staff in each organisation are assembled to discuss findings and recommendations in terms of price collection. The seminar will also provide an opportunity to finalise procedures manuals and to select candidates to attend training of trainers courses.

Training needs assessment

Concurrent with the above, an assessment will be made of training requirements in CBS/ASS and MoA/FMD at both head office and field level, resulting in production of training manuals. Once this activity is completed, in-country and regional training programs will be initiated.

Dissemination media and format

The above sub-section contains a detailed media strategy for MIS dissemination. The phasing of required tasks is summarised below:

- **Marketing information service**
  - Preliminary research to identify audience needs.
  - Pretest pilot programme.
  - Daily radio and press coverage of improved market information and commentary provided by FMD.
  - Press material to be computer-set by FMD and delivered to press for publishing the following day.
  - Radio material to be collected early in the morning and delivered to AIC for recording and distribution to KBC for evening or lunchtime program.
  - Programs to be monitored daily and evaluated regularly.
- **Mass media campaign to announce new regulations and improved MIS**
  - Agree on simple language for existing, and subsequent changes to, cereals movement regulations.
  - Finalise schedule for contributions to, and distribution of, market regulation information in accordance with timing specified in KNDP Program Agreement.
  - Devise series of press announcements and book publication space and date.
  - Devise series of radio programs for national and vernacular services and book airtime with KBC.
  - Print leaflets and stickers.
- **Extension worker support**
  - Write and produce pilot handbook for testing.
  - Produce handbook.
  - Train subject matter specialists in extension workers use of handbook and leaflets.

- Subject matter specialists train and distribute handbook and leaflets at extension workers two-weekly meetings.

- Encourage extension workers to use locally provided prices to encourage improved practices with farmers.

Implementation schedule

The phasing of the above project activities are shown graphically in Figure 8.1 attached for the first 12 months of project implementation. Activities are grouped under the three agencies (CBS/ASS, MoA/FMD, and AIC) responsible for implementing them. The major implementation milestones are:

. CBS produces a report on historical retail price series by beginning of month 5;

. quarterly bulletins are produced by CBS from month 7 onwards;

. wholesale price data in improved format is provided by FMD from month 5 onwards with bi-weekly written commentary in the following month;

. local price analysis at the divisional level is undertaken from month 7 onwards;

. AIC introduces mass media campaign in month 4 of the project;

. AIC produces marketing extension handbook by month 6 of the project;

. AIC produces national and vernacular radio programs for the improved MIS from month 5 onwards, with the addition of bi-weekly market commentary the following month.

Annual project monitoring and evaluation would, finally, be undertaken during the first two months of the following year and thereafter for the project duration.

8.7 Evaluation of MIS operations and performance

Timing

As the project is planned as a three-year activity,. there will be annual evaluations, culminating in an end-of-project final evaluation. The first evaluation will be a start-up evaluation designed to provide constructive input into the emerging program, monitor project inputs, and address any problems which threaten to impede progress in upgrading the MIS. The second

Figure 8.1: MIS PROJECT IMPLEMENTATION PLAN

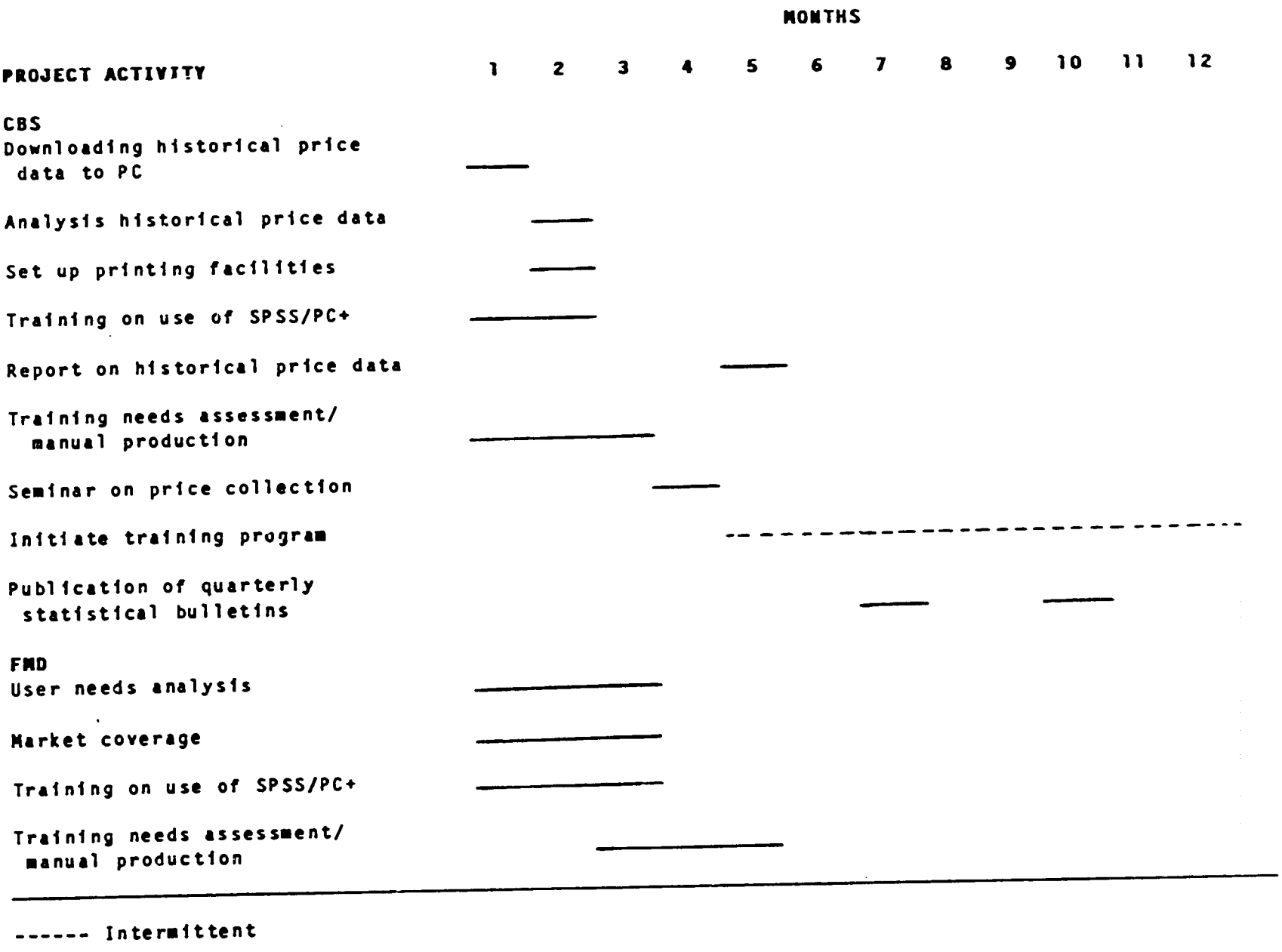
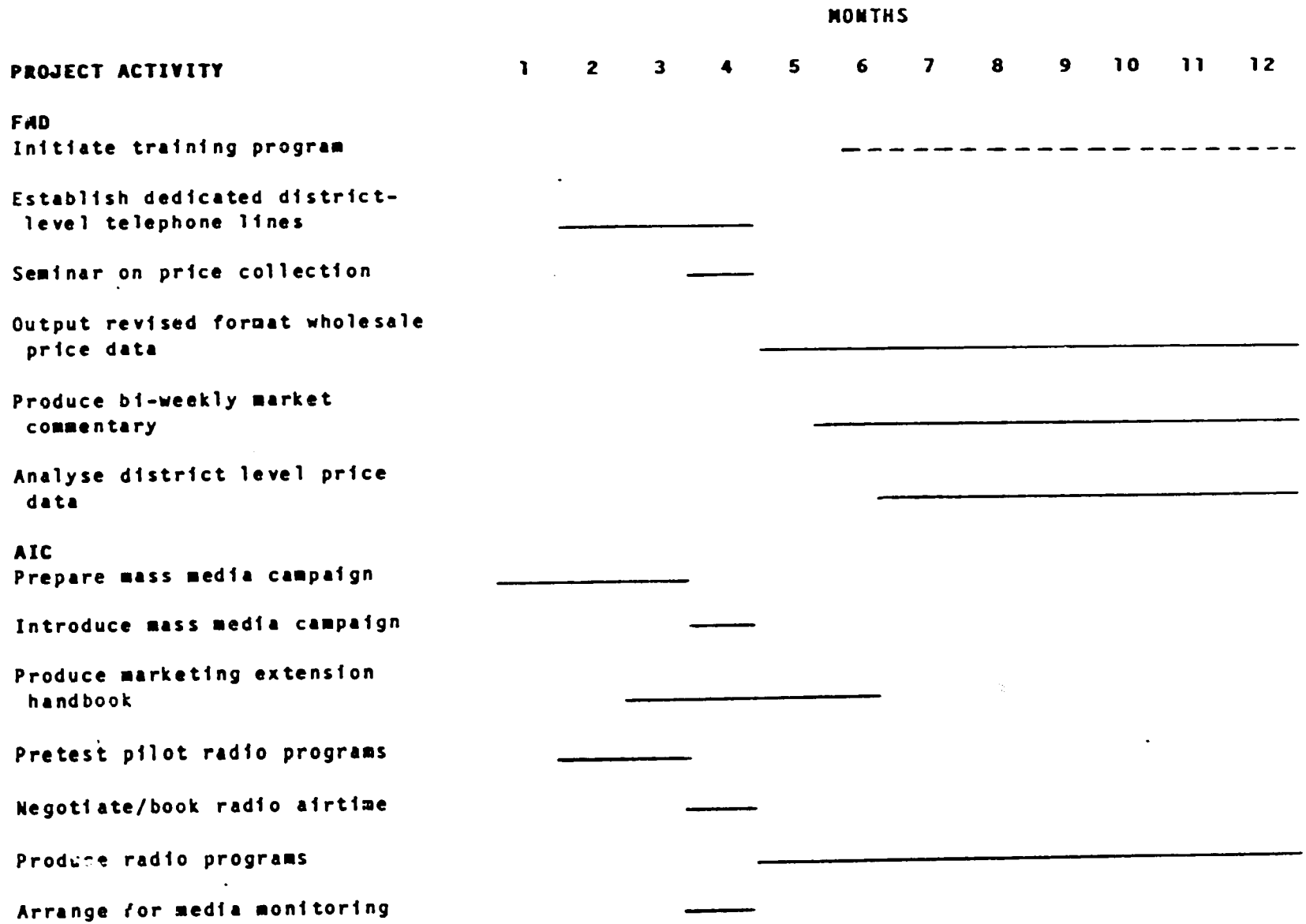


Figure 8.1: MIS PROJECT IMPLEMENTATION PLAN (continued



evaluation will be a more critical review of project outputs and progress in training of Kenyan staff in CBS/ASS and MoA/FMD and in institutionalizing the upgraded MIS. The final evaluation will be a final assessment of project achievements and impacts and will provide constructive input to CBS/ASS and MoA/FMD as to how to ensure the long-run sustainability of the upgraded MIS.

Evaluation criteria

Key criteria in evaluating the effectiveness of the project are as follows:

1. The timeliness, quality and relevance of project technical assistance and training activities, as judged by the agencies receiving the assistance.

2. The effectiveness and commitment of the contract team in building local analytical capacity and fostering teamwork, as judged by CBS/ASS and MoA/FMD.

3. The quality, effectiveness and relevance of outside-of-Kenya training programs in management and analytical methods, as judged by participants in the programs, the TA contract team and the evaluators.

4. The quality, comprehensiveness and clarity of price reports, bulletins and reviews and any analytical work published by CBS/ASS and MoA/FMD under the project.

5. The quality, comprehensiveness and clarity of in-country training materials and the MoA/FMD operating manual for data collection developed under the project.

6. The effectiveness, accessibility, usability, accuracy and clarity of market information disseminated by CBS/ASS and MoA/FMD under the project.

   (a) As judged by public users of printed materials.
   (b) As judged by private users of market information disseminated via the press and over the radio.

7. The effectiveness, accessibility, usability and clarity of extension broadcasts and materials developed under the project (by MoA/AIC) regarding GOK policy and regulatory reform and how to use public market information.

   (a) As judged by private users: wholesale traders, large farmers, small farmers.
   (b) As judged by GOK observers familiar with the extension programs.
   (c) As judged by an outside extension specialist.

8. The usefulness, relevance and accuracy of CBS/ASS and MoA/FMD market information for agricultural sector planning, food supply monitoring, and monitoring of GOK staple crop reform programs.

   (a) As judged by GOK agencies such as MoA/DPD, MoSM, MoNPD and the OP.
   (b) As judged by NCPB.
   (c) As judged by various donor agencies.

9. The usefulness of project-generated market information in assisting MoA/FMD and the MoA extension service in preparing effective marketing extension messages of value to small and large farmers.

   (a) As judged by MoA/FMD and the directors of the national extension service.
   (b) As judged by the World Bank funded extension project team.
   (c) As judged by MoA/AIC.
   (d) As judged by a sample of large and small farmers.

Evaluation methods

Methods used in evaluating the project will consist of the following:

- review of project outputs (operations manual, price bulletins, etc);

- informal interviews with GOK officials and staff of the agencies participating in the project;

- informal interviews with GOK officials familiar with the project and its activities, who are potential users of the MIS;

- informal interviews with the contract TA team, USAID project officer and other interested USAID staff;

- informal interviews with representatives of donor agencies who are familiar with the potential users of the MIS;

- informal interviews with selected wholesale traders, large farmers and small farmers;

access to the results of an annual formal survey of wholesale traders and farmers in six districts, carried out by a contractor to USAID/Kenya, that includes specific questions on potential user familiarity with radio price broadcasts, judgements as to quality, usefulness in informing the listener of marketing conditions, and the timeliness, accuracy and clarity of broadcast market information and extension messages on GOK policies and regulations.

9. PROJECT CONTENT, JUSTIFICATION AND SUSTAINABILITY

9.1 Project content

A definitive list of the content of a donor-supported project cannot at this stage be produced; certain items, for instance, will depend upon the extent of market coverage. What follows, therefore, is an indicative listing of project items to be funded over the proposed three-year life of the project, set out under the general headings of technical assistance, equipment, operational expenditures, printing and communications, and media dissemination.

Technical assistance

The technical assistance to be provided under the project is summarised below.

Project Technical Assistance

Organisation	Long-term TA	Short-term TA
CBS/ASS	1 TA x 2 years	6 man-months Year 1 (Data downloading one man-month, training needs assessment and manual production four man-months, establishment printing facilities and training one man-month)
MoA/FMD	1 TA x 3 years	14 man-months Year 1 (User needs/training/ pre-testing 6 man-months, market coverage/grades/ standards 3 man-months, training needs assessment and manual production 5 man-months.) (Monitoring and evaluation, Year 1-3, one man-month expatriate and 2 man-months local TA per annum)

Equipment

Equipment requirements would include two vehicles for the long-term TA and provision for running costs. On the basis of district-level market coverage of 40 and 20 for CBS/ASS and MoA/FMD respectively, approximately 60 motor-bikes would be required for supervisors, again with an allowance for spares and operating costs. In line with indicative market coverage, approximately 100 sets of scales and measuring tins for CBS and 20 sets for FMD would also be required. In terms of enhancement to current data processing capabilities, two IBM-compatible (one 286 and one 386 with 100 MB hard disc drive) computers with power back-up systems, attendant software, one laser printer, and 20 boxes of diskettes would be required for each organisation.

Operational expenditures

Operational expenditure would cover enumerator transport. It is assumed that this would entail matatu transport costs for approximately 100 CBS enumerators, 20 FMD enumerators and 200 FMD Agricultural Assistants to meet prescribed market coverage and visit frequency.

Printing and communications

In line with recommendations concerning the desirability of a dedicated in-house printing capability, the project would fund a Gestetner duplicator and binder plus recurrent costs for CBS/ASS. For MoA/FMD, provision would be made for approximately 20 district-level dedicated telephone lines plus operating costs for the project period.

Training

Training expenditure would include approximately one month of external training (eg. ESAMI in Tanzania) for each year of the project for approximately ten head office senior management staff of both CBS/ASS and MoA/FMD. Local training would include two-week courses, again for senior management over the project period, in generic management training, computers, and agricultural marketing. In addition, local funding would be made available for training-of-trainers courses in data collection techniques, assumed to be attended by district-level supervisor of each organisation in classes of ten for a period of two weeks in each project year.

Media dissemination

Funding, finally, would be made available for the production by AIC of extension workers' marketing manuals, campaign leaflets and stickers, and newspaper announcement costs. Radio airtime costs would also be met (both national and vernacular) in line with recommended scheduling, together with provision for monitoring of radio and print output. A modest budget for video production and TV inserts would finally be provided plus provision for some initial (project year 1) costs associated with revamping AIC equipment, per diem costs for AIC staff involved in media material pretesting, and radio program production costs.

9.2 Project justification

Quantification of the benefits attributable to a market information services project poses certain difficulties. It is, for instance, impossible to distinguish potential returns from other complementary investments in infrastructure and the catalytic effect of other changes, notably in the policy environment, but also in areas such as relative crop prices, the availability and cost of inputs, credit, etc.

In view of this basic methodological problem, the approach normally adopted is to derive the annual level of benefit that would be required to yield a target economic internal rate of return to the project. This level of benefit can then be compared to total quantifiable potential benefits from the project and a view taken as to how realistic securing such a level of benefit would be in practice.

If considered a necessary investment in securing the benefits arising from cereal sector policy reform, the required level of benefits may be compared to the net economic benefits expected to accrue from the reform process. The magnitude of net economic benefits has been estimated in a recent report, commissioned under the KMDP, to be in the range US$ 16 - 18 million per annum from year 4 onwards of implementation of KMDP and its associated market reform package. It is likely, even with the extrapolation of the recurrent costs required to maintain an effective MIS beyond the project life over the long-term, and a requirement that the project yields a return of 12 percent, that the required annual benefit level would be a modest proportion of this figure. Thus it can be argued that the contribution of an effective MIS (as opposed to what, it is argued, would constitute a continuing ineffective provision of market information in the absence of project support) would only have to be a small proportion of realisable benefits for the investment to be justified.

9.3 Project sustainability

General comments on MIS sustainability have already been made in sub-section 4.3 above. The sustainability of the MIS beyond the end of the proposed project is an important issue: previous experience with donor assistance to market information projects indicates that the level of service can deteriorate rapidly once donor funding ceases. It is, clearly, impossible at this stage to guarantee sustainability. The design of the proposed project is, however, intended to mitigate the likelihood of terminal decline at the end of three years, notably by:

- creating a service which is user-driven. It is much less likely that the MIS will be allowed to lapse if it is generally perceived as useful. The initial refinement of user needs, together with annual M&E of the service over the duration of the project, should help to ensure this;

- agreement with GOK to an effective organisation and management structures for both CBS/ASS and MoA/FMD as well as a formal elevation in the status of both organisations;

- the major recurrent cost item in sustaining service effectiveness is radio airtime. The intention, however, is that private sector sponsorship would be secured by the end of the first year of the project. This is considered a realistic timing, but even if it were not met, there would be a further two years of project funding to take remedial action and refine the dissemination strategy to ensure sponsor interest by the end of year 3 at the very latest.

STATEMENT OF WORK

Background

In Kenya, unnecessary cereals transportation and marketing costs can be reduced if policies and laws affecting market structure are changed and road conditions improved. Current laws underpin the government's authority to restrict cereals movement within and between districts. The removal of these "movement controls" will be a major objective of the KMDP's Non-Project Assistance (NPA) conditionality.

Under the KMDP, the Government of Kenya will invest in road improvements and work with USAID in revising laws and policies that affect maize, maize products, beans, millet and sorghum marketing. To encourage private traders to increase their cereals marketing, KMDP will support the routine announcement of current and revised cereals marketing policies and laws. In addition, official and actual cereals prices will be routinely announced as will the prices of those horticultural crops that provide an alternative enterprise for cereals producers. The ongoing announcement of cereals marketing policies and official and actual prices will provide market participants with equal access to information useful in making cereals and horticultural crop production, sales, shipping, and storage decisions. Finally, cereals market price tracking and analysis will inform government policy decision and assist in program monitoring and evaluation.

During KMDP design a USDA team found that several times a week the Ministry of Agriculture (MOA) announced horticultural crop prices in six marketing centers via the Voice of Kenya (radio). They also described one administrative district that reported maize, beans, sorghum and potato prices to Nairobi for broadcasting on a weekly basis. In addition, the decontrol of fertilizer prices and increases in cereals prices were recently announced although the MOA's routine market information channels were not employed. Finally, a number of crop prices are published daily in Kenya's major newspapers.

KMDP policy conditionality establishes the limit date before which the distribution of market information must begin as December 1, 1990. In addition, conditionality achievement requires that the MOA develop and begin implementing a plan for increasing the accuracy, timeliness, reliability and use of market price information. However, the long-term technical activity will not arrive until the beginning of 1991. Therefore, it is essential that some planning and implementation begin immediately.

Scope of Work

Objective

To design a one-year implementation plan for a market information system. This system should coordinate data collection, information distribution, and analysis. It should assure the widest possible distribution of market information based on the organized access to this information for all market participants. The plan should also ensure the information's relevance to the needs of public officials, producers and traders. The implementation plan

will provide the basis for USAID/Government of Kenya discussions concerning the development of the Ministry of Agriculture's Market Information System.

Tasks

The Agricultural Marketing Improvement Strategies Project (AMIS) will provide a team of technical specialists to complete the following tasks:

1. Meet with Government of Kenya representatives to gain an understanding of current market information distribution activities. Inventory all market related data currently collected including commodities, locations, intervals, methods of collection, the agencies collecting the data and the frequency and methods of distributing the information.

2. Obtain and summarize any planning or valuative documentation on past and ongoing market information distribution activities.

3. Evaluate the financial, human resource, and administrative capacity of the Ministry of Agriculture to undertake market price and regulation information distribution.

4. Describe the procedures and processes of the bureaucracy between data collection and distribution (institutional and administrative issues) and the various financial costs i.e. radio time rates, newspaper advertising rates, etc., of distribution.

5. Describe how producers, traders, and processors presently obtain information necessary for their production, sales, shipping, and storage decisions.

6. Identify the potential users of information on market prices and regulations and specify their data needs. For example, information on prices in nearby rural markets and large urban centers would be useful for producers. What kind of information would be most useful for traders and policy decision makers?

7. Describe how information should be distributed in order to maximize its usefulness. For example, it would seem that radio broadcasts of weekly producer and consumer prices would serve producers and traders. How could this information be packaged for use by policy decision-makers? Develop a distribution strategy that would ensure organized user access and be responsive to the different users needs.

8. Define the different "transaction levels" at which price data could be obtained. For example, a first transaction level would be those prices employed in an exchange between producers and rural collectors, second transaction level might be between rural collectors and from the redistribution points, etc. Identify at what level each institution currently involved in monitoring market prices collects its data. Assess the potential/advisability for achieving one standard data collection methodology for all institutions involved.

9. In addition to the standardization required under 8 above, identify other areas of standardization, such as volume and quality standards,

necessary to enhance ongoing market information activities.

10. Describe how the market prices to be announced should be determined. Should there be one average marketplace price for each urban center, an average price for each marketplace that has significant numbers of transactions, etc? Classify the marketplaces (points of sale) in the KMDP districts according to the volume of transactions executed. Depending on the marketplaces, classify as to whether one, two, three, four or more sample observations of market prices should be made.

11. Develop a strategy for establishing two-way communications between the market information system and its users to ensure that the information disseminated is of appropriate content and form and of maximum usefulness to end-users.

12. Identify and make a preliminary assessment of private sector or quasi-governmental agencies that might support the Ministry of Agriculture's dissemination of market price and regulation information. For example, could the Kenyan Chamber of Commerce be relied upon to disseminate information to complement the announcement of commodity prices and market regulation? The Horticultural Crop Development Authority?

13. Design a one-year implementation plan for establishing a market information system that would coordinate data collection, information distributing, and analysis. The market information system should assure the widest possible publication and distribution of information. Broad based distribution of market information should be based on the organized access to this information for all market participants as well as information's relevance to the needs of public officials, producers and traders.

Annex 2

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Annex 3

LIST OF INDIVIDUALS CONTACTED DURING STUDY

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Frances Ndirangu, Undersecretary of Finance, Ministry of Supplies and Marketing

Margaret Ngigi, Head, Project Analysis Section, Development Planning Division, Ministry of Agriculture.

J S Nyamato, Deputy Secretary, Ministry of Supplies and Marketing

A I Rutema, Senior Economist and Head of Planning Unit, Ministry of Supplies and Marketing

Gunter Schmidt, Consultant to EC Commission CSRP

David Soroko, Agricultural Development Office, USAID/Kenya

Neil Spooner, Head of the Forward Planning Unit, NCPB

Michael Westlake, Advisor to the Development Planning Division, Ministry of Agriculture

Nakuru District

J K A Cheluget, District Agricultural Officer, Nakuru District

Mr Chirchir, Crop Production Manager, Pyrethrum Board of Kenya, Nakuru

Bernard Kemei, Maize Mill Manager, Milling Corporation of Kenya Ltd

Ms Pocyline Kinuva, Divisional Agriculture Officer, Bahati Division, Nakuru District

Mrs Karui, Head of the Farm Management Division, Ministry of Agriculture, Nakuru District

Patrick Maturi, District Statistical Officer, Central Bureau of Statistics, Nakuru District

Joseph Mwaniki, District Marketing Officer, Ministry of Agriculture, Nakuru District

C K Ngetich, Cereals and Produce Manager, Kenya Grain Growers Co-Operative Union Ltd

Joel Omani, Personnel Officer, Ministry of Agriculture, Nakuru District

D K Rotich, Area Manager, NCPB, Nakuru

Various farmers in Bahati Division, Nakuru District

Various wholesalers and retailers in the Nakuru wholesale market

Nyahururu District

Mr J M Isyuka, Marketing Officer, Farm Management Division, Ministry of Agriculture, Nyandarua District

Mrs J W Njogu, District Agricultural Officer, Nyandarua District

Mr A Njoroge, District Statistical Officer, Central Bureau of Statistics, Nyahururu District

Mrs A W Thuo, Farm Management Officer, Farm Management Division, Ministry of Agriculture, Nyandarua District

Various wholesalers and retailers in the Nyahururu market

Nyeri District

Alice W Githu, Divisional Agricultural Officer, Karatina

Marita Kamoni, Home Economics Officer, Ministry of Agriculture, Nyeri District

Mr F Kariuki, District Statistical Officer, Central Bureau of Statistics, Nyeri District

Richard Karuku, District Agricultural Officer, Nyeri District

Alice Kyeba, District Marketing Officer, Farm Management Division, Ministry of Agriculture, Nyeri District

Saul Lwangu, Assistant District Marketing Officer, Ministry of Agriculture, Nyeri District

Patrick Muriithi, Agricultural Extension Officer, Coffee

Various wholesalers, retailers and producers at the Nyeri wholesale and retail markets

Various wholesalers, retailers and producers at the Karatina market

Various producers in Nyeri District

Media contacts

Mr Gacheru, Director, AIC.

Mr Makungu, Radio Producer, AIC.

Mr Athiaya, Radio Producer, AIC.

Mrs F Olang, Press Officer, AIC.

Mr Kamau Kuria, Business Editor, The Standard.

Mr Ngene Gituku, Circulation Manager, The Standard.

Mr Shadrak Amayoke, Business Editor, Kenya Times.

Mr Joel Langat, Distribution Manager, Kenya Times.

Mr Peter Warutere, Business Editor, Daily Nation.

Mr Robert Mwangi, Editor Taifa Leo.

Mr Gichero, Circulation Manager, Nation.

Mr Kosgei, Chief Sales Executive, KBC.

Mrs Mwakesi, Production Controller, KBC.

Mr Ambrose Gandi, Sales Executive, Major Accounts, Rank Xerox.

Mr William Norris, Sales Representative, Gestetner.

Ms Alpa Bid Shah, Copy shop, Gestetner.

Mr Ralph Steadman, Director, Steadman and Associates.

Annex 4

MARKET COVERAGE OF CBS MARKET INFORMATION SYSTEM

Province	District	Market
Central	Kiambu	Kiambu
		Limuru
		Thika
		Githunguri
		Gathundu
	Kirinyaga	Kutus
		Sagana
		Kerugoya
	Murang'a	Kandara
		Githumu
		Muthithi
		Mukuyu
		Kiriaini
	Nyandarua	Engineer
	Nyeri	Nyeri
		Endarasha
		Karatina
		Gakindu
	Laikipia	Nanyuki
		Sipili
Coast	Kilifi	Mariakani
		Kaloleni
		Malindi
	Kwale	Ramisi
		Kinango
	Taita	Wundanyi
		Tavata
		Voi
	Lamu	Mpeketoni
		Mkunguni
		Matonooni
		Mokowe

	Mombasa	Mwembe-Tayari
		Majengo
		Sega
	Tanariver	Hola
		Garsen
		Bura Tana
Eastern	Embu	Runyenjes
		Embu Town
		Iciara
		Kiritiri
		Siakago
	Kitui	Mwingi
		Migwani
		Kalundu
		Kabati
		Mutomo
	Machakos	Kalawa
		Machakos Town
		Matiliku
		Tawa
		Kikima
		Tala
		Masii
		Matuu
		Nunguni
	Meru	Maua
		Kianjai
		Mundantu
		Chokarige
		Gatunga
North Eastern	Garissa	Garissa Town
	Mandera	Mandera Town
Nyanza	Kisii	Daraja Mbili
		Kibirigo
		Keroka
		Riosire
	Nyamira	Riochanda

	Kisumu	Kibuye
		Ahero
		Kiboswa
		Sondu
	Siaya	Bondo
		Ndere
		Ngiya
		Akala
		Aram
	South Nyanza	Kegonga
		Namba Kadero
		Homa Bay
		Oyugis
		Kihancha
		Migori
Rift Valley	Baringo	Kabarnet
		Eldama Ravine
	Kericho	Kimulot
		Sotik
		Fort Ternan
		Kipkelion
		Kericho
		Londiani
	Nakuru	Nakuru Town
		Ndundori
	Nandi	Kapsabet
		Chepsonoi
	Narok	Engare
		Kilgoris
		Mulot
	Trans-Nzoia	Kitale
	Uasin Gishu	Timboroa
		Eldoret
		Burnt Forest
		Turbo
		Kipkaren

Western	Bungoma	Kapkateny
		Bungoma Town
		Kimilili
		Webuye
		Myanga
		Cheptais
	Busia	Bumala
		Busia Town
		Sio Port
	Kakamega	Butere
		Kakamega Town
		Bukura
		Mumias
		Luanda
		Mundeta
		Cheptola
		Khuwisero
		Kimilili
		Kakamega
Nairobi	Nairobi	Wakulima
		Kawangware
		Burma
		Kikomba

CBS PRICE REPORTING FORMS

Annex 5

FORM MS/78

CENTRAL BUREAU OF STATISTICS
GOVERNMENT OF KENYA
MARKET PRICES AT RETAIL LEVEL

ENUMERATOR

MARKET
DISTRICT
DATE

CODE (1 2 3 4 5 6 7 8) CARD (9 10) CYCLE (11 12)

	TIME (1)	QUALITY 1=God 2=Average 3=Poor (2)	UNIT OF SALE (3)	STANDARD UNIT 1=Kilo 2=Std Debe 3=Std (4)	CONVERSION 1 Unit of sale = ... Std units (5)	OBSERVED SALE: NO OF UNITS OF SALE (6)	OBSERVED SALE: TOTAL PRICE (7)	OBSERVED SALE: PRICE PER UNIT OF SALE (8)	OFFICE USE: PRICE PER STANDARD UNIT (9)
CROP..... VARIETY..... Supply 1 Abundant 2 Average 3 Scarce 4 Unavailable									
	CROP (13 14)	VARIETY (15 16)	SUPPLY (17)	QUALITY (18)	STANDARD UNIT (19)	PRICE (20 21 22 23)			
CROP..... VARIETY..... Supply 1 Abudant 2 Average 3 Scarce 4 Unavailable									
	CROP (13 14)	VARIETY (15 16)	SUPPLY (17)	QUALITY (18)	STANDARD UNIT (19)	PRICE (20 21 22 23)			
CROP..... VARIETY..... Supply 1 Abundant 2 Average 3 Scarce 4 Unavailable									
	CROP (13 14)	VARIETY (15 16)	SUPPLY (17)	QUALITY (18)	STANDARD UNIT (19)	PRICE (20 21 22 23)			
CROP..... VARIETY..... Supply 1 Abundant 2 Average 3 Scarce 4 Unavailable									
	CROP (13 14)	VARIETY (15 16)	SUPPLY (17)	QUALITY (18)	STANDARD UNIT (19)	PRICE (20 21 22 23)			

Prices should be recorded for the specified variety only. Should the enumerator need to record prices for other varieties, he must use a seperate section of the form

FORM M4/78

CENTRAL BUREAU OF STATISTICS
GOVERNMENT OF KENYA

SOURCE AND COSTS OF MARKET IN-FLOWS

ENUMERATOR
MARKET
DISTRICT
DATE

CODE (1 2 3 4 5 6 7 8) CARD (0 4 / 9 10) CYCLE (11 12)

CROP (13 14) VARIETY (15 16)

	SOURCE OF SUPPLY				VOLUME	PRICE	COSTS		SALES					
SEQ NUMBER (1)	FROM WHOM BOUGHT 0-Don't know 1-Own produce 2-Oth Farmers 3-Coop Society 4-Mkt Board 5-Board Agent 6-Local Trader 7-Dist Trader 8-Other (2)	WHERE BOUGHT 0-Don't know 1-Own holding 2-Oth Holdings 3-Coll Centre 4-Roadside 5-Local Mkt 6-Distant Mkt 7-This Mkt. 8-Shop 9-Other (3)	DISTANCE BROUGHT (km) (4)	TYPE OF TRANSPORT 0-N/A 1-Headload 2-Animal 3-Push cart 4-Bicycle 5-Bus 6-Matatu 7-Lorry 8-Oth motor 9-Other (5)	STD UNIT* (6)	NO OF STD UNITS (7)	TOTAL BUYING PRICE (Shs) (8)	TRANSPORT COST (Shs) (Including Personal fare) (9)	OTHER COSTS (Shs) (Including gate fees storage, packing, bags etc) (10)	WHOLESALE?** (11)	UNIT OF SALE (12)	STD UNIT* (13)	CONVERSION 1 Unit of sale = std units (14)	PRICE PER UNIT OF SALE (shs/cts) (15)	ACT b EXP Act-1 Exp-2 (16)
17	18 19	20	21 22 23	24	25 26 27 28 29	30 31 32 33 34	35 36 37 38	39 40 41 42	43		44	45 46 47	48 49 50 51 52	53

*STD UNIT CODES
1-Kilo
2-Std Debe
3-Std Tin
4-90Kg bag
5-100Kg bag

**FOR SALE WHOLESALE CODES
1-Yes
2-No

GORVENMENT OF KENYA

CENTRAL BUREAU OF STATISTICS

RURAL RETAIL PRICES

ENUMERATOR _____

SUPERVISOR _____

DISTRICT _____

MARKET _____

DATE _____

DISTRICT		MARKET				CARD		WEEK	
1	2	3	4	5	6	7	8	9	10	11	12

ITEM	STD UNIT	UNIT OF SALE	CODE	WEIGHT PER UNIT OF SALE					PRICE PER UNIT OF SALE			
				KILOS		GRAMMES			SHS		CTS	
			13 14	15	16	17	18	19	20	21	22	23
Maize Flour (local) from loose Bag	Kilo		01									
Milling fee for Maize grain	Per Kilo		02									
Rice Grade II from loose Bag	Kilo		03									
Household soap Red bag	Kilo		04									
Washing Powder OMO Tiger pack	50gm		05									
Toilet soap Sunlight Medium	One Cake		06									
Razor Blade Nacet	One Blade		07									
Asprin Tablets	2 Tablets		08									
Cooking fat Kimbo paper pack	250gm		09									
Salt white finely ground	100gm		10									
Curry Powder Simba mbili etc	10 gm		11									
Sugar refined	Kilo		12									
Tea leaves Simba	50gm		13									
Busaa/Muratina/Munazi	1/2 litre		14									
Beer - Tusker/Whitecap	Bottle		15									
Soda - Fanta or Coca-Cola	Bottle		16									
Paraffin	1/2 litre		17									
Matches	One box		18									
Cigarette Sportsman	One stick		19									
Cigarette Ten cent	One stick		20									
Eggs	Six eggs		21									
Milk - Fresh from local Farmers	1/2 litres		22									
Sea fish - Shark (Coast Province)	Kilo		23									
Lake fish - Tilapia (Other Province)	Kilo		24									

ITEM	STD UNIT	UNIT OF SALE	CODE	WEIGHT PER UNIT					PRICE PER UNIT OF SALE			
				KILOS		GRAMMES			SHS		CTS	
			13 14	15	16	17	18	19	20	21	22	23
Beef with Bone	One Kilo		25									
Matumbo	One Kilo		26									
Mutton or Lamb	one Kilo		27									
Goat Meat	one Kilo		28									
Pork	One Kilo		29									
Live Chicken	Kilo	One Chicken	30									
Green Gram	Kilo		31									
Chick Peas Kunde	Kilo		32									
Fresh Peas Sold in heaps	Kilo		33									
Cooking Bananas Green	Kilo		34									
Onions Sold in heaps	Kilo		35									
Sweet Bananas	Kilo		36									
Oranges	Kilo		37									
Mangoes	Kilo		38									
Sweet Potatoes	Kilo		39									
Cassava	Kilo		40									
Firewood	Kilo		41									
Charcoal	Kilo		42									
Bicycle repair 1med. Puncture	one puncture		43									
Bus fare per Km	1 Passenger		44									
Matatu fare per Km	1 Passenger		45									

NOTE (1) If an item is no available at the shopping Centre or Market, Write N A in the column headed UNIT OF SALE

Annex 6

MOA/FMD PRICE REPORTING FORM

MINISTRY OF AGRICULTURE

DAILY WHOLESALE INFORMATION FOR HORTICULTURAL PRODUCTS

DATE: ---------- 10-8-84

COMMODITY	UNIT	WEIGHT KGS	NRB	MSA	~~NRA~~ BCMI	ELD	KSM	NYR	KTL	KIS	KMG	MRU
Avocados	Bag	89.1Kg	200	250		130						
Bananas Ripe	Bunch	13.8Kg	50	80		34			70	60		
" Cooking	"	22.0"	30	40		40			30	35		
Brinjals	Bag	43.6"	200						70			
Cabbages	" Ex	126.2"	280	450		120				170		
"	Bag	92.0"							130			
Cauliflower	Crate	38.3"	60									
Chillies	Bag	37.9"	300	275		240						
Capsicums	"	50.0"	300			270						
Carrots	"Ex	137.7"	350									
"	Bag	100.0"		600		150			180	220		
Lemons	Bag	95.2"	250			230			180	260		
Lettuce	"	50.9"	200									
Limes	Net	12.6"		30								
Maize Green	Bag Ex	143.6"	200			320						
" "	Bag	71.7"		115					180			
Mangoes	Bag	96.2"				500			400	~~500~~		
"	Small Basket	10.8"	150	40								
Dry Onions Bulb	Bag	95.7"				600			450	300		
Dry Onions Bulb	Net	13.2"	140	100	120	120						
Spring Onions	Bag	141.7"	300		120	200			70	100		
Oranges	Bag	93.1"	350	600		400			300	400		
Passion Fruit	"	57.4"	240						450			
Paw-paws	Box	53.7"	180			70			120	30		
Peas fresh	BAg	51.3"	250	585		250			400			
Pineapples	Dozen	11.8"	30	40		80			45	42		
Potatoes Red	Bag	110.8"	280	350		120			180	200		
" White	"	110.8"	170	255		100			180	200		
" Sweet	"	98.8"	300	250		200						
Tomatoes	Box L	63.6"	220	60	180	250			400	180		
"	" M	23.1"	90	40	90	200			240			
"	" S	13.4"	50	35					200			
Cucs	Bay		50	155		50			20	100		
Tangerines	Bsk			50								

Annex 7

SUGGESTED MIS USER SURVEYS

Formal surveys of potential MIS users, particularly producers and traders, are recommended at the outset of project implementation. The following guidelines are intended to be suggestive and informative, requiring pre-testing and adaptation before being used as formal instruments in the field.

Producers

How do you find out about crop prices before you plan to sell produce?

a) from farmers in my village
b) from rural collectors assembling in my village
c) from farmers and traders in the nearest wholesale market
d) from radio broadcasts
e) from the newspaper
f) from relatives/friends in urban areas
g) from transporters.

What is the price today in the (nearest urban wholesale market) for maize? for beans?

For a busy farmer such as yourself, where and to whom do you think it is best to sell your produce?

(a) at the farmgate to rural collectors
(b) at the nearest rural market to traders
(c) at the nearest rural market to other producers/consumers
(d) at the nearest town wholesale market to small traders (early in the market day)
(e) at the nearest town wholesale market to larger wholesale traders (when the market has become busy).

Would you like to receive more information about prices prevailing in local (district level) markets? (a) Yes (b) No (c) Don't know.

What would be the best way to transmit this information to you?

(a) by radio
(b) by newspaper
(c) through my local agric. extension agent
(d) through my local divisional agriculture office
(e) through someone (or some means) at a local market.

Is there currently any market information broadcast over the radio?

(a) Yes (b) No (c) Don't know/not sure

If so, what day of the week and at what time is this market information announced over the radio? (a) Day_____ (b) Time_____

What would be the best time of the week (day, hour) to broadcast market information to you using the radio, if prices were to be announced only once a week? (a) Day_____ (b) Time_____

What it be useful to announce prices of key crops over the radio every day? (a) Yes (b) No, not necessary or useful (c) Don't know

If so, at what time? _____

In what language what you prefer market information to be announced?

(a) Kiswahili
(b) English
(c) Kikuyu
(d) Other _____

Which language would be your second choice?

Would you consult market information (price) boards at local market places if the MOA were to offer this service? Explain concept of price boards (wholesale prices of key locally produced crops in local markets, markets in adjacent districts, and a sample of important urban wholesale markets).

(a) Yes definitely
(b) Probably
(c) Sometimes
(d) Probably not
(e) No, it would be unnecessary.

What are the biggest problems you face when you go to market your crops?

(a) Poor rural roads
(b) Few or no buyers come to the farm
(c) I lack information about prevailing prices and what traders could afford to offer me
(d) Transport is not regularly available for moving produce to local markets
(e) Lack of standardized units for selling (not sure if I'm getting cheated by trader) and a scale to verify weight
(f) Other.

How large is your farm? _____ acres (or observe whether large, medium, small)

Which crops have you grown this season (or did you plant in the most recently completed cropping season), and about how much land was devoted to each crop?

(a) Maize _____ acres
(b) Beans _____ acres (or note if intercropped with maize)
(c) Vegetable crops _____ acres. Note specific crops
(b) Traditional cash crop _____ acres. Note crop (coffee, tea, pyrethrum) and area

Approximately how much of each major crop (other than traditional cash crops) did you sell (or have you sold to date) after harvest (of crops grown during a major cropping season)?

Crop	Quantity Harvested	Quantity Sold

Please explain to me your understanding of currently enforced regulations regarding movement of maize from one district to another.

(a) Ten bags permitted for own use/consumption
(b) Ten bags permitted for any use
(c) No bags permitted
(d) Any amount can be moved without restriction
(e) Don't know/unsure
(f) Other.

Could you also explain to me your understanding of currently enforced regulations regarding movement of beans from one district to another.

(a) Ten bags permitted for own use/consumption
(b) Ten bags permitted for any use
(c) No bags permitted
(d) Any amount can be moved without restriction
(e) Don't know/unsure
(f) Other.

What are the current gazetted prices (prices paid to farmers) of the following scheduled commodities?

Maize _____
Beans _____
Finger millet _____
Sorghum _____

Other observations to note:

(a) Sex and approximate age of informant

(b) Wealth indicators other than farm size (type/quality of housing/roofing, bicycle, other)

(c) Does this farm have any irrigation? If so, note type and number of acres irrigated. Which crops are irrigated?

(d) Highest level of formal education of informant

(e) Household size (living on farm)

(f) Number of children in school.

Traders

Which crops do you buy and sell? Note crop and approximate volume purchased during the last month (four weeks).

Now ask the trader the following questions about the most important crop that she/he buys/sells.

Where and from whom do you assemble produce (in descending order of importance)?

(a) at the farmgate
(b) at the nearest rural market (from rural collectors)
(c) at the nearest rural market (from producers)
(d) at the nearest town wholesale market (from collectors)
(e) at the nearest town wholesale market (from larger wholesale traders)
(f) at the nearest town wholesale market (from producers).

What is your most important and reliable source of market information?

(a) Other traders in my district
(b) Other traders outside my district (at selling points)
(c) Farmers
(d) Radio broadcasts
(e) Newspapers
(f) Friends (outside trade)/family in other (urban) areas
(g) Other.

What are the buying and selling prices today that you would receive/pay for your key traded commodity at the following levels of the marketing systems?

(a) farmgate in most important supply zone (note area)
(b) nearest rural market (note market)
(c) nearest urban wholesale market (note market)
(d) nearest major urban (top 10-12 cities in Kenya) wholesale market

Would you like to receive more information about prices prevailing in local (district level) markets? (a) Yes (b) No (c) Don't know.

What would be the best way to transmit this information to you?

(a) by radio
(b) by newspaper
(c) through my local agric. extension agent
(d) through my local divisional agriculture office
(e) through someone (or some means) at a local market.

Is there currently any market information broadcast over the radio?

(a) Yes (b) No (c) Don't know/not sure

If so, what day of the week and at what time is this market information announced over the radio? (a) Day_____ (b) Time_____

Do you use this market information in your trading decision?

Do you think that this market information is accurate/reliable/consistent?

Please offer any suggestions on how this market information service could be improved.

What would be the best time of the week (day, hour) to broadcast market information to you using the radio, if prices were to be announced only once a week. (a) Day_____ (b) Time_____

If market information were only broadcast once a week, what type of information would be most useful?

Which prices should be announced?

(a) Average weekly price
(b) Average price on most recent market day
(c) Modal price, taking transacted volumes into consideration
(d) Price range (minimum, maximum) over the course of the week
(e) Other.

Should any other market information be announced? If so, please describe what other information would be most useful.

(a) Arrivals at/shipments from major wholesale markets
(b) Grade/quality/variety of produce
(c) Approximate quantities in each major wholesale marketplace
(d) Information on market swings, volatility during week
(e) other.

What it be useful to announce prices of key crops over the radio every day?
(a) Yes (b) No, not necessary or useful (a) Don't know

If so, at what time? _____

In what language would you prefer market information to be announced?

(a) Kiswahili
(b) English
(c) Kikuyu
(d) Other _____

Which language be your second choice?

Would you consult market information (price) boards at local wholesale market places if the MOA were to offer this service? Explain concept of price boards (wholesale prices of key locally produced crops in local markets, markets in adjacent districts, and a sample of important urban wholesale markets).

(a) Yes definitely
(b) Probably
(c) Sometimes
(d) Probably not
(e) No, it would be unnecessary.

What are the biggest problems you face as a trader?

(a) Poor rural roads
(b) I lack information about prevailing prices (and volumes) in local markets
(c) I lack information about prevailing prices (and volumes) in markets away from my home base where I buy/sell
(d) Transport is not regularly available for moving produce to local markets
(e) Lack of standardized units for buying (not sure if I'm getting cheated by farmers) and a scale to verify weight
(f) Official (police) harassment
(g) Lack of working capital.

To ask traders in scheduled staple crops:

Please explain to me your understanding of currently enforced regulations regarding movement of maize from one district to another.

(a) Ten bags permitted for own use/consumption
(b) Ten bags permitted for any use
(c) No bags permitted
(d) Any amount can be moved without restriction
(e) Don't know/unsure
(f) Other.

Could you also explain to me your understanding of currently enforced regulations regarding movement of beans from one district to another.

(a) Ten bags permitted for own use/consumption
(b) Ten bags permitted for any use
(c) No bags permitted
(d) Any amount can be moved without restriction
(e) Don't know/unsure
(f) Other.

What are the current gazetted prices of the following scheduled commodities?

Commodity	Price to Farmer	In to NCPB Depot
Maize		
Beans		
Finger millet		
Sorghum		

CHART 1: PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: STRENGTHENING AGRICULTURAL MARKET INFORMATION SYSTEMS AND SERVICES IN KENYA

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes To contribute towards increasing returns and enhancing the stability of returns to farmers from the sale of staple and other food crops in the domestic market.	**Measures of Goal Achievement:** . Decreased deviation of seasonal price trend from long term price trend. . Inter-market prices more closely reflect transport and other market costs than at present. **a. Progress/Benefit** **b. Benefit Incidence/Beneficiary** Narrowing of farm to retail price spreads for key commodities. . Increasing number of requests for price data from policy-makers.	1. Variation analysis (temporal and spatial) using MIS and CBS data. 2. Farmer and Trader Surveys. 3. Survey of extension offices at district and divisional level. 4. Files of CBS and MIS/MOA.	**Assumptions for achieving goal targets:** 1. GOK liberalise the marketing of staple food crops as per the CSRP timetable. 2. Lack of market information currently disadvantages farmers and causes unduly high inter-regional and inter-seasonal price differentials for food crops. 3. Injecting more and better price/market information increases market transparency and fosters market-oriented production and marketing behaviour by farmers and traders. 4. Lack of reliable price data is a critical bottleneck in designing agricultural marketing policies.
Project Purpose: To increase market transparency for farmers, traders, policy-makers and development agencies with regard to price trends for maize, beans and other food crops in Kenya.	**Conditions Expected at End of Project** . at least 20% of traders use MIS on regular basis. **a. Progress/Benefit** . at least 50% of extension workers have access to MIS output and use it in work with farmers . DPD/MOA and major donors undertake **b. Benefit Incidence/Beneficiary** regular monitoring and analysis of food staple market conditions.	Surveys conducted with farmers, traders, GOK policy analysts, development agencies on usefuleness of MIS and understanding of cereals policy/regulatory issues.	**Assumptions for achieving purpose:** Farmers/traders/policy analysts and makers act on the market information trat is provided through the project.
Outputs: 1. Daily MOA wholesale market report on key commodities for major urban markets and supply market centres, broadcasted on national radio and published in national newspapers and used by fresh produce traders. 2. CBS providing weekly retail price data on key commodities in 64 rural market centres (including the KMDP districts) for analysis by DPD/MOA, other agencies and donors.	**Magnitudes of Outputs** . Daily radio/newspaper reporting re-established for staple food items. **a. Progress/Benefit** . MOA MIS and extension staff at District/Divisional level complete training courses . Marketing extension handbook produced **b. Benefit Incidence/Beneficiary** Evaluation report based on surveys conducted with farmers, traders, extension officers, enumerators.	1. Daily market conditions bulletins 2. Manual of Operations for MIS wholesale service 3. DPD/MOA and donors having regular access to CBS retail prices 4. Periodic radio programs/newspaper articles/seminars for key interest groups completed 5. Marketing extension component included in district/division extension program 6. Project Progress Reports & Evaluations	**Assumptions for achieving outputs:** 1. Adequate cooperation between CBS and MOA with regard to data accessibility. 2. No political restriction on publishing of information on policy changes, prices and market conditions. 3. Effective cooperation and liaison between PMD HQ and district/divisional level staff, etc. 4. Project inputs available as per plan.
Inputs: 3. Strengthened MOA capacity at district and divisional level to provide marketing extension services to small-scale farmers 4. National broadcasts and newspaper publications, seminars targetted at key interest groups on the changing shape of the cereals policy environment and its implication for the public and private sector.	**Implementation Target (Type and Quantity)**		**Assumptions for providing inputs:**
INPUTS . Long term TA (60pm) . Short term TA (expat & local) . Motor bikes and spare parts . Printing materials and supplies . Training equipment & supplies . Micro-computers, supplies & software . Equipment for district level MIS . Local currency funds for MIS applications.	. Local currency for in-country training courses Forex for scholarships and ex-region within region short courses and OTJ training . Local currency for media costs of MIS and policy dissemination programs.	Inspection and audit of project resources.	Project proves acceptable for donor-funding.

PROJECT DESIGN SUMMARY: LOGICAL FRAMEWORK

ANNEX O

Annex 9

GUIDELINES FOR CLASSIFYING MARKETPLACES IN SELECTED DISTRICTS

Market hierarchies and a typology

Classification schemes for marketplaces in Africa often involve the following distinctions:

- Assembly or Collection Markets. These are typically rural markets concentrated in production zones which serve principally as bulking points for key commodities. They may also have some retail trading, but this is usually quite limited.

- Redistribution Markets. First handlers typically sell to urban-based wholesalers at these markets, who take the produce on to terminal markets and sell some of it to retailers or rural traders serving rural deficit ares (in the case that bulk is broken) at the same marketplace.

- Terminal Markets. Large urban wholesale markets, at which traders based in the urban area or in the hinterland come with large volumes of produce (from supply zones) to sell to other traders, retailers and institutional buyers (schools, hotels, army, etc.)

Central place theory establishes market hierarchies based on physical flows of commodities between points (agricultural product, input and consumer good), the extent of bulking, breaking bulk and consumption at different points, and industrial, agribusiness and service sector establishments in each location. Since the data requirements of doing this type of analysis are enormous, it is not recommended here. Classification of markets based on types and volumes of agricultural product marketing is sufficient for USAID purposes.

Key classification variables

Key variables for classifying markets might be the following:

- Volume of agricultural produce arriving at and shipped from a market.

- Range and volume of key commodities bulked or broken from bulk at the market.

- Numbers of wholesale buyers and/or sellers conducting business at the market.

. The physical size of a wholesale marketplace, assuming that it is fully utilized, can also be a crude proxy for its importance.

It is important to note that most daily wholesale markets in Kenya tend to have one or two major market days during the week, at which the volume of agricultural commodities bought and sold at the marketplace is far larger than other days of the week. Comparisons among markets should be made for major market days.

Operational guidelines for classifying markets

the development plans prepared by each district provide a useful source of information about markets in each district. If USAID's rural roads program were approved by the GOK, the development plans for each district in which road improvements were made would be a useful point of departure. A preliminary classification of the key markets in each district is as follows:

Nakuru District	Terminal market - Nakuru
Kakamega District	Terminal market - Kakamega
Uasin Gishu District	Terminal market - Kakamega
Nyeri District	Redistribution and minor terminal market - Nyeri Key bulking market - Karatina
Kitui District	Terminal market - Kitui
Kisii District	Terminal market - Kisii

Further applied research will need to be conducted at the beginning of any program to improve rural roads. The choice of roads to upgrade will depend in part on an assessment of the potential expansion in marketed surplus generated as a result of road investments. This would depend in part on the current size distribution of farms in a district, rainfall and soil conditions, irrigation infrastructure and potential, and the quantity of additional good quality land available for cultivation.