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## Market Information Services

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**Keywords:** *market information systems, market data, price information, trade information.*

**Abstract:** *Information is the lifeblood of most market economies. Nevertheless, attempts to jump start information flow by creating Market Information Services (MIS) usually fail. The author brings together experiences and lessons from experts in the field on the reasons for such common failures and what can be done to avoid them. Critical topics such as institutional structure, dissemination methods, and funding are outlined to guide the reader through the basic issues that must be addressed in order to create successful MIS.*

### I. Introduction

Knowledge of market information tends to reduce the risks and lower the transaction costs of participating in the market. These efficiency gains can lead to increased participation in the markets and greater stability of prices and supply/demand. Improved market supply in turn tends to reduce costs and therefore increase demand. More efficient agricultural markets benefit all of the participants: growers, traders, processors and consumers and can favorably impact food security especially in poorer countries.

Improved information enables farmers to plan their production, harvesting, and selling according to market demand and in some cases to choose the optimal marketing channel (i.e. selling at one or a combination of: the farm gate, local market, wholesaler, processor, retailer). Information also helps them to negotiate favorably with traders. Traders, especially smaller ones benefit from better information in making efficient allocation decisions to hold products in storage or ship them to the most lucrative markets. Indeed lack of information can be an entry barrier to producing alternative crops or participating in markets. Market information is also a necessary part of Early Warning Systems that can identify potentially dangerous food shortage trends. Such broad public benefit characteristics qualify Market Information Services (MIS) as a public good.

The FAO has defined MIS:

*The service, usually [but not always] operated by the public sector, which involves the collection on a regular basis of information on prices and, in some cases, quantities of widely traded agricultural products from rural assembly markets, wholesale and retail markets, as*

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*appropriate, and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policymakers and others, including consumers.<sup>2</sup>*

## II. Guidelines and Key Principles

Market Information Services can provide two types of data: current and historical. Current data enables immediate market decisions while historical data can be used by both the private sector for future production, planning, and storage decisions and by the government for its planning, policy and food security strategies. While better information can lead to improved efficiencies and profitability, most small operators especially in countries with little open market experience, will at least initially require the assistance of extension services to help them interpret historical data.

In designing MIS, the prime considerations are commercial utility and sustainability. Therefore the service must be:

- market-driven
- accurate
- timely
- cost-effective

The first step must always be a thorough participatory assessment of the stakeholders' needs. In Zambia during the early stages of agricultural liberalization, it was discovered that price information alone did not satisfy farmers' needs. They also needed information about who was purchasing, at which markets, and under what conditions (i.e. cash, credit, bagged or bulk). Responding to client demand or being market-driven enabled the service to provide needed information thereby increasing its utility and its chances of being sustained.

### **What can be done about high rates of failure**

Despite the obvious value of MIS, an FAO survey of 120 countries identified only 53 functioning national MIS and only 13 that offer daily price dissemination. Worse yet, only a handful of those functioning could be judged successful. The problem often stems from poor initial planning and a lack of operational resources that soon result in unsustainable or defunct MIS.

Unrealistic expectations and an inadequate sustainability framework are at the root of most failures and typically manifest as:

- Inadequate or unsustained staff training
- Nonexistent or unenforced quality controls
- Insufficient provision for future funding
- Management responsibility embedded in government agencies, sometimes as a non-priority
- Inability of bureaucratic services to understand market needs

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<sup>2</sup> Shepherd, Andrew and Schalke, Alexander. 1995. "The Indonesian Horticultural Market Information Service", AGSM Occasional Paper No. 8. FAO, Rome. Quoted in: Shepherd, Andrew. 1997. Market information services Theory and practice. FAO. Rome.

Since many are the result of initial donor funding and most donor funded services have proven unsustainable it is worthwhile to re-evaluate the strategies of the past. Current trends toward short, consultant-supported projects appear even less likely to succeed. For most countries, full-time technical assistance for at least one year is the minimum recommended by the FAO for such a project.

### **Data collection and accuracy**

Quality of information, critical to any service, is often poor since staff turnover is rarely addressed with adequate new training and the reporting standards are rarely monitored or enforced. Reporting can become mechanical and inaccurate and, particularly when done by government officials, not conducted during the peak early morning market hours but rather later in the day, if at all. Furthermore, prices and quantities can often be under-reported given the frequent suspicion of government officers and the desire to evade taxes. Creative strategies can sometimes be useful such as the one considered in Sierra Leone to fund the wives of government officials to shop the market and then accurately weigh produce and record the prices at their husbands offices before returning home. This addressed a number of problems including the frustration of market traders with reporters constantly asking prices and never buying anything.

Information asymmetries can have significant negative consequences for both the traders and the credibility of the service. To address this, care must be taken to plan a balanced data collection strategy that accurately represents the range of trading outlets, both geographically, by volume/value, and by trading channel.

### **Data processing, transmission, and dissemination**

The government departments that often operate MIS rarely have enough reliable data processing and communication equipment and the resulting delays in dissemination hamper the service's credibility. The chosen medium(s) for dissemination such as radio or newspapers often require payment which many services cannot afford and find difficult to justify given the lack of visible or tangible returns for such an investment.

### **Funding**

Evidence suggests that the more developed the country, the more likely a MIS is to be commercially viable as local enterprises grow to understand the value of information and have the means to pay for it. A valid and often overlooked or underestimated function of an MIS is to educate market participants about the use and benefits of market information. Although developing countries MIS have attracted sponsorship and advertisements these are rarely sufficient to cover operating costs. Because dissemination costs are usually significantly lower than the cost of gathering information, private or hybrid public- private services, like those in Beijing and South Africa, appear to work best when they utilize information that is already available from the public sector.

### **User education**

Market information can best be utilized by those who have a measure of market education. Traders, especially those in economies that have recently become more market oriented, can benefit from basic knowledge about what the information represents, how it is gathered, what it can mean, and ways to take full advantage of it. An educational component is a useful feature of any MIS.

### **III. Basic Roadmap**

The first step in establishing a Market Information Service is to assess the capabilities of the country in terms of both technical capacity and the capacity/willingness to finance recurrent operating costs. This assessment should:

- examine the potential for private sector involvement
- consider the best institutional structure to manage or monitor this service
- be thoroughly researched among the stakeholders
- be planned and designed in a participatory fashion
- set truly sustainable objectives that realistically reflect available funding and capabilities

A good initial assessment is likely the most important factor in the success or failure of the MIS. It is critical that MIS planners have a thorough understanding of their country's formal and informal marketing system and product flows along the supply chain from the grower through various intermediaries to the market and between markets. This understanding should be supported by detailed surveys to determine the actual needs and information requirements of market participants. Such surveys can cover growers, wholesalers, retailers, brokers and traders, exporters, extension services, government departments, and even consumers. Good surveys will identify:

- the exact type of information each market participant requires
- the format in which such information should be presented
- the method or media choice for dissemination
- how often information should be provided
- at what time of day information should be disseminated
- whether any market participants will require extension services or other education to ensure that they can understand and utilize information effectively

#### **Institutional structure**

With government and donor resources ever more scarce it is worth considering the involvement of the private sector. The frequent inability or lack of motivation on the part of government bureaucracies to deliver such services further weighs in favor of private sector involvement. But, given the difficulty of making such services profitable especially in the least developed countries, a hybrid structure is suggested.

One approach is for the government to finance a private enterprise, at least in part, to collect and disseminate the data while the MIS functions and management are carried out by the enterprise. Such an enterprise could be part of a trade or sectoral association provided that care is taken to ensure that the association is not unduly biased toward one category of market participants over another (i.e. wholesalers association might bias information against producers)

Processing of information ought to be done with standardized software that can be locally supported.

#### **Select realistic goals**

Many MIS in developing countries are unable to maintain basic coverage. Given that fact it would be wise to resist the temptation to maximize product and territory coverage and rather begin with a small

workable program, learn useful lessons and gradually expand. Ensure that the MIS is not seated in a government ministry which is committed to gathering historical data rather than timely and more commercially relevant information.

### **Dissemination methods and their funding**

Most of the 120 countries surveyed by the FAO reported difficulties in funding adequate dissemination. Even though radio is the most effective way of reaching rural communities in most developing countries, many MIS cannot afford the cost given that many stations do not regard market information as news but rather as advertisements. Part of project design must include the budgeting of costs for media dissemination.

In the long run government incentives and educational efforts about the merit of public information might change the stations' point of view but in the meanwhile there are some other opportunities for funding such as sponsorship and these should be identified in project design. Zambia's MIS is sponsored by a bank and Sri Lanka's by a fertilizer company.

Less costly but not as effective are notice boards. They seem best located in markets and public places where growers and traders will readily see them. Nevertheless, these have yielded mixed results often due to lack of timely updating, poor location or inadequate content (limited prices only) and that they require users to be literate. In countries as diverse as Ghana, Zimbabwe, and Bangladesh market traders gather and convey information effectively via the use of cellular telephones.

Achieving dissemination is only half the battle. The information is much more likely to be accessed if it is not overly long, monotonous, and boring. Quality of presentation and creativity are valuable adjuncts to the raw data. Price information can be mixed with analysis of crop and market conditions as well as new opportunities. Brief anecdotes and interesting or useful information about products reported may, in certain circumstances, add entertainment value to the transmission and help to make more appealing to market participants and the media.

### **Charging fees for market information**

In developing and transition economies nearly all of the MIS are public services the majority of whose clients cannot afford to pay. Radio, the most effective form of dissemination, presents intrinsic difficulties in collecting fees. Nevertheless, in countries where markets are sufficiently developed and telecommunication is reliable and inexpensive, private or semi private services can succeed.

In Columbia daily prices are transmitted by satellite and available by noon. The China MIS receives income from the toll calls required to access the dedicated phone line or modem connection from which their information is disseminated. In situations such as South Africa where trade associations or government collect computerized data, private information services can be commercially viable by providing varied and user-friendly data in a timely manner and at a reasonable cost over the Internet. The subscription fees for the service's 400 clients range from US \$28 to US \$38 per month.

One option is to embed the service costs in the fees charged to traders for their annual government registration.

### **Timing**

Prices for horticultural produce ought to be offered daily whereas prices for staple crops can be listed weekly since these change more slowly than perishable crops. A government operated MIS will be at a disadvantage in providing horticultural prices since market information will not be collected on the prime market days of Saturday and Sunday when government offices are closed (Muslim countries may follow a different schedule).

It would be too expensive to collect data throughout the day for reliable weighted averages; evidence shows that the peak-period price provides the most dependable gauge of price. Collecting information during the period of each market session is ideal since that is when price formation is most reliable because of maximum transactions. Since much trading occurs early in the morning it may be useful to plan the data collectors' schedule with this in mind. With government employees this may not be possible and can be yet another disadvantage of a government run MIS. This is not necessarily the case for certain markets, particularly in Asia, that operate around the clock.

It is critical that data be collected at the same time every day in order to allow consistent comparisons; supervision of data collectors is often necessary to assure this.

Radio or television broadcasts must take into account the times when growers or traders can tune in. Evidence shows that it is best to avoid broadcasts during normal working hours.

### **Language**

Unless broadcasts and publications are in the local vernacular poorer constituents may not understand them. Broadcasting in multiple languages can increase air time and thus the cost, the relative benefits must be weighed.

### **Collecting**

Government officials typically have difficulty in this role because many traders are suspicious of them. If there is no other choice it will be critical to educate market participants so that they understand that the information they provide is recorded anonymously, will remain confidential, and will only be used in aggregation or averaging.

One exception to this general rule is that marketing extension officers seem to be an excellent focal point for collection since they are also in a good position to advise their constituents about daily information and longer-term trends. Given their intimate understanding of the marketing systems they tend to understand and appreciate the importance of market information.

In the face of diminishing government resources market participants such as trade associations or chambers of commerce may play a valuable role in information collection but given the possibility that these may manipulate information to their advantage they must be regarded with great caution. One option is to have these market participants collect and disseminate already aggregated information rather than primary data. Stringent controls and a system checks and balances are nevertheless essential if such an approach is to be undertaken.

FAO studies have shown that a number of MIS were simply not understood. Whether market participants understand and know how to utilize this information is a factor that is sometimes overlooked. For example, does a grower know what he can expect for his products given the daily prices in

an urban market several hours away? Can annual price trends be interpreted to help determine more opportune times to plant, harvest, and go to market?

Data collectors should be trained regularly to maintain quality standards. Usually, prices ought to be gathered from a reasonable number of traders (at least five) and then recorded on forms.

### **Monitoring and supervision**

A manual should be available for every step of the process and include daily timetables for when information must be collected, processed, and delivered to the media. Monitoring should be performed at every step including the actual transmission. Care should be taken to maintain the data securely with checks and balances to ensure that one person cannot manipulate or falsify the data.

### **Content**

The capability to receive feedback from service users is important for ensuring that the service is constantly providing desirable information in a useful format. A practical feedback mechanism should be built into the MIS design. This should periodically review both the crops and the markets that are covered as well as level of use by participants and their satisfaction. Initial project design should also assess the possibility of whether more detailed information than that which is broadcast daily can be sold.

Initially at least the only crops that ought to be included in the first stages of a MIS are those which are commercially important and are widely traded. The tendency to cover a large number of products ought to be avoided. Since there are many varieties of agricultural products it is important to clearly identify the specific varieties which are covered.

The absence of grades and standards can cause confusion when these are not accepted and in general use. Since this is the case in many developing countries, particularly in the domestic markets, prices for different standards or qualities will vary. The long-range solution is to encourage adoption of grades and standards to significantly diminish misunderstandings in both the gathering and dissemination of information. (**Hotlink** Grades and Standards) The immediate solution is to recommend that the MIS target products of Fair Average Quality (FAQ). Regular training will be needed to ensure consistency between collectors and markets. Extension officers and educational efforts are necessary to inform market participants of these standards. When products that meet FAQ standards are unavailable is better to provide no information rather than risk confusion with information about inferior or superior products.

In many areas where scales are not used and there is no clear consensus of weights or measures it is best to use the standard trading measure of that market or region. Attempts by data collectors to counteract the inconsistencies inherent in such a method by the use of scales to measure weight is often counterproductive and alienates or offends many sellers.

Information other than average prices can be provided:

- shortages or oversupply in key markets
- supply and demand trends
- transportation costs
- total volume sold
- highest and lowest prices of the day and the volume sold at each

Providing a variety of information, such as quantities traded, quantities available, etc. can make an MIS much more useful but this is not always a simple matter. In less developed markets, for instance, it can be difficult to ascertain quantities when trucks arrive at all hours and can be loaded with a variety of different products. The South African wholesale markets have a sophisticated and controlled reporting system; without it an MIS would find it very difficult to track the large quantities of produce. In Mexico quantity information is collected in only 3 of the 26 markets where price information is collected because wholesalers refuse to cooperate fearing that the information will reach tax collectors.

Quantity information can be useful to gauge trends but, unless it is provided by the markets themselves, is often unreliable when gathered by data collectors on a daily basis. Considering that it can take all day to gather supply information in one market and only about one-hour to gather price information the relative cost-benefits must be assessed. In many cases experienced data collectors can make reasonable subjective assessments about quantities. Instead of costly efforts to obtain precise quantities, most market participants will be well served by general supply information such as: "no tomatoes arrived at the market and current supplies are very thin and declining quality" or "the market is flooded with white beans today"

Market information can include out of the ordinary but useful information such as market closures, disrupted access, and food safety issues. During food shortages a MIS can help by suggesting alternative markets or sources of supply or advising about upcoming imports or food aid shipments.

### **Providing information to consumers**

Since retail markets are rarely covered by market information systems in developing countries providing such a service would require significant additional expenditure. In addition to the high cost, the utility of such a service would be limited due to the tiers of markets -- supermarkets, town or city markets, and local shops -- all of which have different quality standards and price levels depending on their locations and their clientele. Nevertheless useful consumer information about product gluts or shortages (and alternatives) can occasionally be provided; these could be a great benefit to both consumers, producers and traders alike.

On the other hand, directing some select information toward consumers may not only provide a public benefit but also attract potential sponsorship or advertising.

## IV. Best Practices

### The Indonesian Market Information Service

The Indonesian Service designed with extensive participatory fieldwork resulted in a clear focus toward the provision of prices at the farm and local market level rather than those of regional or national markets because this was what the targeted stakeholders (farmers) determined was their priority.

The Indonesian MIS trains its staff annually and despite average wages and work outside of the normal hours, they maintain good relations in the markets and are well motivated. Data is collected Monday to Friday at different times of day appropriate to the location: morning on farms and afternoon at wholesale markets.

Prices are averaged and broadcast on local language radio stations during the early evening hours. Prices from selected areas are also broadcast on national radio later in the evening. Notice boards are maintained daily in most markets and monthly averages are published in newspapers and in an annual volume.

After more than 20 years of operation the Indonesian MIS continues to provide valuable services to growers and has been replicated for meat and fish. The 1997 cost of operating the service was approximately US \$ 850,000 (0.1% of annual vegetable production value). It has proven to be remarkably sustainable and compares favorably with the US \$9.5 million Japan spends for its horticultural MIS<sup>3</sup>.

*Source: Andrew Shepherd, FAO.*

### FAO-AgriMarket (FAM) v.2.0

Traditionally, to manage their market data, agencies responsible for tracking market information have relied on either spreadsheets which do not provide the security, range and quality of reports necessary or on custom programming which is expensive to set up, modify and maintain.

A new version of FAO-AgriMarket is available on CD ROM to assist marketing agencies to manage market data. The program automates the entry, processing and reporting of periodic market price and supply data for agricultural products, and is intended primarily for use by domestic market information or market intelligence agencies, traders and exporters of agricultural products, as well as large scale producers, and marketing consultants. It allows for a wide range of statistical analyses, the use of deflators for the calculation of real prices, multiple currency comparisons, and many other useful calculations and data manipulation. In a new Windows-based format it is more flexible and even simpler to use than in its original form.

<sup>3</sup> this figure is attributed to Jan Bay-Petersen in Robbins. 1998

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## V. Resources

### People and Institutions

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