



Bringing Market Information to Farmers*

Andrew W. Shepherd

This chapter forms part of the internet publication

**“Bridging the rural knowledge gap: Information
systems for improved livelihoods”**

Dixon & Wattenbach (Eds.) (forthcoming),
which is based on a workshop held at
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Introduction

Market information can be shown to have significant benefits for farmers, and also traders. Unfortunately, information on market prices, quantities traded, and other marketing-related matters rarely reaches farmers in developing countries. Information technologies or farm radio would appear to represent important ways of overcoming this problem, if difficulties relating to information availability and cost can be overcome.

The paper briefly reviews the benefits of market information. It then considers the problems with existing market information sources and gives examples of initiatives to overcome such problems, in part through using local radio stations.

The benefits of market information

Farmers can use market information in two ways. Current, or immediate, information can be used to negotiate with traders, to decide whether or not to go to market and, in some cases, to decide which market to visit or supply. Historical information, such as a time series of prices over several years, can be used to make decisions regarding product diversification or the production of out-of-season crops. It may even be used to help basically subsistence farmers identify opportunities for a cash income (Shepherd 1997).

At the simplest level, the availability of market information can enable farmers to check on the prices they receive, vis-à-vis the prevailing market prices. One of the best examples of this comes from Indonesia, where market prices for vegetables are broadcast daily on provincial radio stations for all major production areas. Nearly all farmers listen to and use these broadcasts. If they receive prices lower than those broadcast they may, for example, conclude that they should sell to other traders in future, negotiate more forcefully or try to improve the quality and presentation of their produce. Broadcast prices are also used as a starting point in negotiations with traders the following day and the availability of the Indonesian MIS does enable farmers to negotiate from a position of relative strength (Shepherd & Schalke 1995).

Few other countries have either the concentration of vegetable farmers in a limited number of production pockets or the necessary resources to contemplate such a service on a national level. Nevertheless, even a simple service offering regular price information for one or two markets can be beneficial to farmers. Information reduces the costs of selling the produce by reducing risks. A study in Ghana, for example, found that many producers, lacking market information, feared that the cost of marketing would exceed their selling prices and thus did not go to market. In the extreme case, farmers who do have the necessary price information must sometimes make the rational decision to plough their crops into the ground. But such a decision needs to be based on reliable information rather than on possibly unfounded concerns about low prices.

Prices for a particular product in one market may differ significantly from prices for the same product in another market. In theory, the provision of market information can permit farmers and traders to take advantage of such price differences. In reality, however, this is not done as often as might be expected. In part this is because both farmers and traders have strong linkages with particular markets, linkages which may involve family, tribal or credit obligations. Individual farmers may not be able to achieve the economies of scale necessary to visit more distant markets. Also, the high-priced markets may have only limited sales and attempting to supply them presents the risk for farmers and traders that they may arrive at the market only to discover that others have got there before them. As information available to traders improves, such “spatial arbitrage” opportunities are increasingly short-lived. For example, several countries in the Central and Eastern European region have reported significant reductions in price differences after introduction of market information services. In Albania, for instance, the available information about more distant markets had been very limited because both roads and telecommunications were bad, but as the result of an MIS being introduced there was a noticeable reduction in price differences (Christopher Grace, *pers. comm.*).

While, individually, farmers may be unable to take advantage of limited spatial arbitrage possibilities,

collectively they may be able to organise transport to more distant and profitable markets. Marketing by groups of farmers is not, of course, without its problems and, while offering some attractions, has not been widely taken up in practice. In general, cooperative involvement in marketing does not have a good track record. Improved availability of information may, however, encourage more group marketing initiatives, which can achieve the necessary economies of scale for farmers to deliver to markets outside their immediate area.

Existing information sources for farmers

A Market Information Service commonly 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 appropriate, and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policy-makers and others. Most countries have introduced government-run market information services (MIS) at one time or another. Most countries have introduced government-run market information services (MIS) at one time or another. By and large these have failed to meet their objectives and have experienced problems of sustainability. MIS have tended to thrive while supported by donor projects, only to fade away when the donors leave, until resuscitated by a new donor. While most countries do have such a national Service there are notable exceptions. In South Africa, for example, the National Department of Agriculture has fully recognised the need for an MIS but has been unable to obtain new resources or reallocate existing resources to set up one. Many MIS function as data collectors while losing sight of the original purpose of the data collection, i.e. to assist farmers and traders to make commercially useful decisions. In Bangladesh, for example, weekly price information is collected from 150 different markets, but little of this is made available to farmers. Dissemination is almost always the weakest point and this is made increasingly difficult by the fact that government-owned radio stations are increasingly required to be commercially minded. This has led to the growing insistence of many radio stations that

they should be paid for broadcasting price information. In Kenya, quoted rates for a weekly broadcast are said to be as high as US\$120,000 p.a. In Uganda, a fee of \$20,000 p.a. per language has been quoted. In Tanzania the charge is \$10,000 p.a. for weekly national broadcasts in Swahili (S. Ferris, *pers. comm.*).

Among the other weaknesses of MIS are the facts that they pay inadequate attention to the quality of the data collected, which can often be poor and not an accurate reflection of prevailing market prices, and that they collect and disseminate information on prices too infrequently. Prices of horticultural produce in major markets are constantly changing but MIS may collect price information only weekly or even every two weeks. While such information can be used for long-term purposes it does not really help farmers to negotiate with traders or to decide whether or not to send produce to market.

National MIS often disseminate information in a form which is unsuitable for some farmers. Some MIS publish market prices in newspapers but do not broadcast them on the radio. In some countries newspapers only reach rural areas slowly; in many a large number of farmers are illiterate. Where broadcasts are used these are usually only on national radio and are often only in one or two languages, which cannot be understood by all farmers. Broadcasts are often at the wrong times for farmers to be listening, unless they take their radios to the fields with them.

In years gone by a popular way of disseminating market information was to use notice boards in villages or markets. However, MIS frequently forgot to update the information on the boards, which eventually became broken down. Alternatively, they left prices on the boards with no date, so that farmers had no idea of the day to which the prices referred. A local information service in Ghana, which will be considered below, also tried to use boards but found that frequent rains washed off the information before farmers could see it.

It is, of course, a simple matter to list problems and a much more difficult matter to resolve them. In many countries market information services are doing a good job, and in others they are working hard to overcome problems. Almost all suffer from a shortage

of money to do the job properly. In many cases rural radio stations wishing to broadcast market information will have to rely on such MIS as there are presently few, if any, other formal sources of information.

Farmers can, of course, obtain information from other farmers or from traders but both sources are unreliable, for fairly obvious reasons. Information available to rural traders on urban market prices is almost certainly more up-to-date than that provided by market information services as not only do traders regularly visit these markets, but they also learn about market conditions from other traders. Increasingly, traders are now in direct contact with markets by standard telephone and, where available, cell phone. However, it is in a trader's interest to maximise his or her profits and a strategy to achieve this is unlikely to include giving unbiased information to farmers. Farmers, who may not be able to afford a radio, let alone a cell phone, are rarely in a position to argue. Other farmers can be an important source of market information, particularly about local markets. At the same time, it should not be assumed that information from farmers is always reliable. They may remember the total price they received, but may not have known the exact weight that they sold (particularly when using non-standard containers), and thus cannot provide reliable information on the price per kilogram. Also, farmers may tend to exaggerate the prices they receive. They may want other farmers to think that they are either very good at negotiating with traders or producers of top-quality produce which gets the best prices.

Other than government MIS, traders or other farmers there are few other information sources available to most farmers. National media often broadcast commodity prices provided by marketing boards. However, the trend in Africa is for such boards to be closed down, and the private sector may be less keen to supply price information. Information is sometimes made available by banks and reproduced in newspapers and magazines. This is mainly to be found where there are large commercial farms, e.g. in South Africa where the First National Bank prepares weekly commodity reviews. Some extension services provide limited market information but to access this usually requires the farmer to visit the extension office.

New approaches to market information provision.

Difficulties associated with national-level market information services have encouraged the development of new approaches, emphasising the importance of information dissemination, and collection, at the local level. This, of course, reflects a general trend towards the decentralisation of government services. To date, these experiments have mainly been supported by external donors and it is too early to say whether these activities will be sustainable or whether they will experience the same problems as donor-supported national MIS.

In the mid-1990s an FAO project in Zambia recognised that the grain marketing liberalization process would be assisted if farmers had access to information about market prices, crop buyers and their buying terms and conditions at provincial level as well as at national level. Assistance was provided to three provinces to produce monthly market information newsletters. However, it is the recent increase in local FM radio stations that is making the localization of market information really feasible. In Uganda, the International Institute of Tropical Agriculture (IITA) is working with United States Agency for International Development (USAID) and the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA). USAID is funding a new national-level MIS that collects weekly prices on 28 commodities from 19 districts and disseminates information by national radio. This Service forms the basis for pilot-scale activities to localise market information, which are supported by CTA. Such a move is particularly important in Uganda in view of the large number of languages spoken.

One of the three pilot areas in Uganda presently uses local-language Radio Uganda services. This is in the eastern part of the country, which has around five million people, and includes three assembly markets for maize, i.e. Jinja, Iganga and Mbale. These markets represent an important source of maize for buyers from Kenya, as well as Uganda. Information about maize is collected three times a week by market reporters who are already employed part-time by the national Service. Local and national price information is broadcast locally three times a week.

However, emphasis is not just on duplicating the price information collected by the national MIS but also on obtaining other relevant marketing information, such as the prevailing transport situation, the markets' turnover, and the number and type of buyers. Such information is analysed in Kampala and 15-minute radio programmes in local languages are produced, using interviews with market participants in those languages as much as possible (Muganga & Ferris 2000).

The costs associated with data collection can be considerable. In Mali, for example, before the reorganization of the MIS discussed below, data collection costs had risen to 64 percent of the MIS's operating budget. Local services may well find collection costs prohibitive and this is one reason why the interrelationship between the local and national services in the Ugandan model is important.

Such a relationship does not, however, exist in the other CTA-funded pilot programme in Ghana. Although there is a national MIS, operated by the Ministry of Agriculture, this suffers many of the problems listed above. The national Service has not taken advantage of using any of the 43 local FM stations now operating in the country. The pilot programme is based on the main Asesewa market in the Eastern Region of Ghana, and also involves five surrounding village markets where price information is collected and displayed on notice boards, together with prices from Asesewa. On the market day of Friday prices from Asesewa are collected and broadcast early in the morning, on three FM stations serving different language groups, with the intention of encouraging farmers to go to the market if prices are good. Their ability to do this is somewhat constrained by the condition of the roads, but the market information has been well received by farmers and has encouraged trade, including across the Volta lake from neighbouring Togo (Boakye 2000). To date the main constraint being faced by the programme is the insistence on the part of the radio stations to be paid for the broadcasts.

In 1999 the MIS in Mali was decentralized, with the creation of 22 local offices throughout the country, in addition to the central office in Bamako. These local units are now responsible for collecting information and arranging for its local dissemination,

a significant change from the previous arrangement whereby local collectors sent their information to the Head Office which was responsible for processing it and arranging its dissemination nationally. At the same time, responsibility for operating the MIS has passed from the grain marketing board (OPAM), with oversight from the multi-donor Cereals Market Restructuring Programme (PRMC), to the Chambers of Agriculture of Mali (APCAM). Prior to this restructuring the MIS was fully dependent on PRMC donor funds; today it is fully financed by the Government (Dembélé et. al. 2000).

APCAM has contracted with 24 local radio stations to disseminate price and quantity information regarding food crops of local interest. Currently eight of the main local units are linked together by an FM radio-telephone system, and are equipped with modems. They can thus exchange price information by e-mail among themselves and with the Head Office in Bamako. Farmers have also asked that this system be used for them to place "buy and sell" offers, opening up the possibility of electronic commerce for food crops in Mali (John M. Staatz, *pers. comm.*). Many other countries presently lack a privately-owned radio network. In Zimbabwe, for example, a considerable amount of agricultural information, including market information, is broadcast on the national state-owned radio, in a variety of languages. There are, however, no local stations (L. Mukwereza, *pers. comm.*). South Africa, on the other hand, does have an extensive network of FM stations broadcasting to rural areas, but none is apparently broadcasting market information. The producer of a programme for farmers on one FM station indicated to the author that he had no idea where to find such information. In Mozambique, market information is broadcast by local radio stations. They invariably require payment for this. Government and donor projects and NGOs are presently meeting the cost (A. Schalke, *pers. comm.*).

Local FM farm radio and market information

The above examples are of tentative activities to localise market information provision, taking advantage of the growing number of local FM radio stations. It is increasingly being recognised that farmers who sell mainly to local retail or assembly markets have considerable difficulties in relating information about a few central markets to their own needs and thus there is a need to make information available about local markets. Furthermore, the information provided nationally is often in the wrong language, difficult to understand and difficult to access. The limited experiences to date with MIS broadcasts on FM radio are positive. Indeed, after starting MIS broadcasts one radio station owner in Uganda was reportedly “mobbed” by farmers asking for more information (P. Robbins, *pers. comm.*).

Farmers will continue to be poorly served with market information if progress is only made on the basis of initiatives of donors and NGOs. Indeed, in some cases these initiatives may be counterproductive when they offer the possibility for radio stations to be paid for market information broadcasts. Stations come to see these programmes as the equivalent of paid advertisements. Inevitably, such arrangements will prove unsustainable once the donors have departed. There would be a greater chance of sustainability if the radio stations could come to see market information as a public service, equivalent to news broadcasts. Moreover, market information on the radio should attract farmers to listen, thereby allowing the radio stations to charge more for commercial advertisements. An alternative approach is for companies to be approached to sponsor MIS broadcasts, although this is less satisfactory as sustainability would also be threatened if the sponsor decided to withdraw.

Rural radio stations wishing to provide market information on their own initiative have a range of options, depending on the availability of information and the resources of the station. These include:

- **Using easily available information.** At the simplest level, stations could consider using information available on national or international radio. Those in commodity-growing areas, for example, could obtain the latest world market prices from the daily broadcasts of the BBC. Where national radio broadcasts some prices from major urban fruit and vegetable markets these could also be used, particularly where they are relevant to the farmers in the station’s catchment area.
 - **Using the Internet as a data source.** This may seem an unrealistic idea for many rural radio stations at present but the rapid expansion of Internet use worldwide suggests that it is only a matter of time before the Net is widely available. The main constraints to overcome are the lack of or poor quality of telephone lines, the quantity of information that can be carried over those lines and the cost of long-distance calls. Recent technological developments indicate that there are prospects to overcome problems associated with telephone lines. Potential technologies include solar-powered electricity generation, radio modems and mobile or cell-phone services.
- Having access to the Net solves only half the problem, as access has little value if useful information is not available, which is presently the case in most African countries. One exception is South Africa, where there is a considerable amount of market information on the Internet, either free or for a small charge.
- However, Web-based information services in other countries may only take place slowly. This is mainly because the agricultural marketing systems tend to be less formally structured than in South Africa and the organizations that could provide information over the Internet do not necessarily exist. It is also, perhaps, unrealistic to expect local radio stations to monitor web sites on a daily basis. For this reason there may be the need for a central organization to monitor such sites and forward by e-mail or fax relevant information to each station. Such a body could be the national radio association, the Ministry of Agriculture, the state broadcasting organization, etc.
- **Do-it-yourself.** In Phnom Penh in Cambodia a local FM radio station was providing daily

market information several years before a Government MIS was set up with assistance from FAO. Every day a reporter went to one of the city's markets and broadcast directly from the market using a mobile phone, the programme being sponsored by the mobile phone company. The reporter first gathered information on the prices of a fixed list of products and began his broadcast with these, before interviewing traders and consumers. The programme was possibly of more value to consumers than producers as a different market was visited each day and so continuity of information was lacking. Nevertheless, it is an interesting example of what can be done.

Where mobile phones are unavailable the radio station could still consider collecting information itself. Even if resources are lacking to send a staff member to the local market to collect prices on a daily basis, arrangements could be made with staff members' families who may well have to visit the market to purchase their own supplies. For a small fee family members could be asked to record the prices they paid and phone these to the station, for compilation and broadcast on the same day. Such an approach is, of course, far from ideal and runs the risk of inaccurate information being disseminated. Possible problems will be briefly discussed later.

- **Establish linkages with other organizations.**

Arrangements could be made with other organizations that would be responsible for collecting prices and passing these on to the radio station ready for broadcasting. One possibility could be the local Extension Service. Another could be local farmers' associations or local branches of national associations.

- **Establish linkages with national-level MIS.**

Notwithstanding the problems with national MIS identified earlier, these may still offer the most reliable, and least-cost, source of market information in many countries. In some, e.g. Ghana, price information is being collected from a large number of local markets, but is not being used. Local radio stations could perhaps make arrangements for this information to be sent to them. In other cases, the promise of regular

dissemination may be sufficient to persuade the MIS to begin collecting information in the local market. At the very least, local stations could broadcast national information in local languages and, perhaps, provide farmers with some guidance on how to use this (see below).

Possible problems with market information on local radio.

It is a matter of debate whether, when the information provided is not necessarily reliable, the availability of some information for farmers is better than none. Radio stations need to be aware of a number of difficulties that can arise in the collection and interpretation of data, and try to avoid these. A particular problem in much of Africa is the fact that weights and measures are not fixed. Products are sold, for example, by the "tin", by the "heap" or by the "bag". While tins and bags may have a consistent size in a particular locality, they may not necessarily be consistent throughout the country. There is also the practice of the trader adding a "dash" once the sale has been concluded. The size of the dash may vary according to supply and demand conditions. The size of heaps also varies according to the product. For individual products traders may vary the heap on a daily or even hourly basis, in order to keep a fixed price per heap while reflecting the realities of supply and demand. Reporting on the prices of such flexible units thus runs the risk of inaccuracies. On the other hand, converting the units to kilograms requires taking scales to the market or buying the produce and weighing it later. The former may incur the wrath of traders, while the latter can be expensive (although almost certainly the most accurate method available).

Other areas in which misunderstandings can arise include issues of variety and quality. For example, in some parts of Africa there may be as many as ten varieties of bean on sale in a market on any one day. Simply reporting the price of "beans" on the radio is therefore not very helpful. Farmers can also be misled if the quality they produce is not the same as the quality to which the market report refers. The time at which prices are collected can also be important. In many countries prices of perishables go down at the end of the day as traders try to sell their stock to

make way for fresh produce the following day, or as farmers sell off their produce to avoid having to take it back home. Another potential misunderstanding is related to the stage in the marketing chain at which the price is being collected. If the radio reports on the price at which consumers are buying, that is not the price the farmer is going to get when taking produce to market and selling it to a trader. To avoid such misunderstandings it is desirable for radio stations carrying market information to have occasional programmes, which explain the precise nature of the prices being broadcast.

Local radio stations need to be aware that farmers can only absorb and use a limited amount of information. Market information programmes should concentrate on the most important crops in the most relevant local market(s) and not provide price information about products of interest to only a few farmers. Finally, as noted earlier, it is important to make sure that broadcasts are timed to coincide with when farmers can listen to them.

Other ways of making information available to farmers

There is little doubt that radio is the most efficient way of getting market information to farmers. However, in this situation farmers become passive recipients of information that the radio station decides to provide, and may not be receiving the information that they really require. Telecenters, defined as shared sites that provide public access to information and communication technologies, have been proposed as ways of bringing the Internet to rural areas, so enabling farmers to access the information that they really need. However, such rural “internet cafés” may not be too suitable for market information because, although they decentralise information availability, the information sources remain centralised. Furthermore, even if there is a rapid explosion in the number of such Telecenters, they will always be more difficult to access than radio broadcasts.

Conclusions

A newly published Guide entitled “Understanding and Using Market Information” goes into more depth

on the points raised in the previous section and also discusses issues such as marketing costs (Shepherd 2000). Suitably adapted to local conditions it could be used by local radio stations as the basis for talks advising farmers on how to use the price information the stations provide. Radio stations that would like to store the price information they collect may also be interested in the FAO-AgriMarket software programme. This is based on MS-Access, is simple to install and operate and comes with a comprehensive User Manual and on-line Tutorial. There is no restriction on the number of commodities or markets that can be inserted and the programme can generate daily, weekly or monthly reports, as well as graphs and charts.

Many of FAO’s publications on marketing may be accessed and downloaded in portable document format (pdf) from the Group’s website. Information related to agricultural marketing can be found on <http://www.fao.org/ag/ags/AGSM/MARKETIN.HTM>. The software mentioned above and the associated Guide are available free of charge under http://www.fao.org/ag/ags/AGSM/FAM20/index_E.HTM.

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