



**Expert consultation on
market information
systems and agricultural
commodities exchanges:
strengthening market
signals and institutions**

Proceedings of an expert meeting held in Amsterdam,
The Netherlands, 28–30 November 2005

CTA Working Document

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Edited by:
Shaun Ferris (International Center for Tropical Agriculture), Peter Robbins (Commodity Marketing Information Services) and Vincent Fautrel (CTA)

Synthesis

Introduction

Background

Since the mid-1990s, CTA has been actively involved in the promotion and pilot testing of market information systems (MIS)¹ and agricultural commodity exchanges (ACEs)² at the local, national and regional levels in Africa, the Caribbean and the Pacific (ACP). The results were reviewed at expert consultations in October 2000 and November 2001. CTA has also supported a series of training activities, and utilised electronic knowledge-sharing systems and publications to disseminate information.

The pilot work has generally been successful in improving technical and institutional arrangements for gathering, storing and disseminating market information. However, stakeholders have highlighted the need to increase the usefulness of market information to farmers and rural traders. Similarly, investments in developing new selling points (e.g. auctions, commodity exchanges) have successfully tested new ideas, but remain effectively inaccessible to some farmers (e.g. those that are poorly organised in terms of their marketing efforts or who are unable to deliver produce of a sufficiently high standard for formal markets).

Objectives and expectations

The Expert Consultation on Market Information Systems and Agricultural Commodity Exchanges: Strengthening Market Signals and Institutions was convened to review CTA's investments in MIS and ACEs within a broad perspective to determine which are the more successful systems, what conditions have enabled them to function well, and how they are being used by farmers' organisations, traders and other development partners. Thus, the Consultation was expected to identify key factors that have supported success, and to discuss issues related to new opportunities for strengthening market signals and for gaining a better understanding of the conditions required to enable small-holder farmers to gain access to markets in a more sustainable and remunerative way.

¹ A market information system (MIS) is a service that 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, including consumers (Shepherd, 1998: <http://www.fao.org/DOCREP/003/X6993E/x6993e03.htm>, accessed 22 August 2006).

² A commodity exchange (or commodities exchange) is an exchange where various commodities and derivatives products are traded. Most commodity markets across the world trade in agricultural products and other raw materials (such as wheat, barley, sugar, maize, cotton, cocoa, coffee, milk products, pork bellies, oil, metals) and contracts based on them. These contracts can include spots, forwards, futures and options on futures. Other sophisticated products may include interest rates, environmental instruments, swaps, or ocean freight contracts. Commodity exchanges usually trade futures contracts on commodities, such as trading contracts to receive something, for example maize, in a certain month. A farmer growing maize can sell a future contract on his or her maize, which will not be harvested for several months, and guarantee the price that he or she will be paid upon delivery; a breakfast cereal producer buys the contract now and guarantees the price will not go up when it is delivered. This protects the farmer from price drops and the buyer from price rises. Speculators also buy and sell the futures contracts to make a profit and provide liquidity to the system. (Wikipedia contributors, 2006: http://en.wikipedia.org/w/index.php?title=Commodities_exchange&oldid=70205359; accessed 22 August 2006)

The key questions addressed by the Consultation were:

- **Sequencing:** Is sequencing important in terms of developing and applying elements of an efficient marketing system?
- **Conditions:** Are there any preconditions necessary for these strategies, tools and institutions to work in support of small-holder farmers?
- **Context:** In what ways do the marketing tools and strategies have to be adapted to work effectively in different ACP countries?
- **Leadership (and ownership):** Who should introduce these tools and strategies? How should they be funded?
- **Linkages:** Should these tools, strategies and institutions be introduced as single entities or clustered to make efficiency gains?
- **Priorities:** Where should CTA invest, especially in terms of research and development (R&D) interventions?

Methodology

An electronic working group was established with the Consultation participants and other selected partners to introduce the themes and provide a forum for sharing information on the topics to be debated. The e-working group was facilitated by a core group of experts; it commenced at the end of October 2005 and ran for 3 weeks. Weekly summaries were provided by one of the facilitators. The purpose of the e-working group was to enable the participants to raise issues and put forward ideas on the current thinking about marketing institutions, with the aim of learning from past experience and considering fresh viewpoints. The central question was: How can small-holder farmers in ACP countries take advantage of the opportunities offered by the liberalisation of agricultural markets? The e-working group defined the key areas (questions) for further debate at the meeting (*see* Introduction — Objectives and expectations *above*).

The Expert Consultation itself was a 3-day meeting organised under the following sessions:

- Marketing needs from government, trade and farmer perspectives;
- Innovations in MIS;
- Market instruments to strengthen the demand signal;
- Auctions, warehouse receipts and ACEs — case studies.

The following strategies, tools and institutions were identified and provided the context for answering the key questions:

<i>Strategies</i>	<i>Tools</i>	<i>Institutions</i>
<ul style="list-style-type: none"> • Marketing policy support • Farmer organisation • Grades and standards • Establishing a legal framework for trade • Support to private-sector institutions • Advocacy and capacity-building, networking 	<ul style="list-style-type: none"> • Market development analysis • Market intelligence • Establishing and integrating financial instruments 	<ul style="list-style-type: none"> • Market information services • Warehouse receipt system (WRS) • Agricultural commodity exchange

The meeting combined formal presentations, plenary discussions (question and answer sessions) and working group discussions.

Key Results and Conclusions

Management, ownership and partnerships

In terms of management of MIS, it was deemed inappropriate for the institution to be solely within the domain of government (evidence shows that full government control has been fatal to emerging MIS). In fact, no one entity should even own an MIS. Ideally, a developing MIS should involve collaboration and competition among government, private sector, development groups and public-sector agencies.

In general, it was felt that government and donor(s) should take the lead in determining policy for developing a market institution, with input from regional bodies, private sector, NGOs, universities and consultants.

However, it was recommended that an analysis be conducted of the roles and responsibilities of the various actors, and the needs for each individual market institution. An analytical framework (e.g. Table 1) may be used for this.

Table 1. Example of analytical framework for evaluating roles and responsibilities for the development of a market institution

	Government	Consultants / NGOs	Farmers	Traders
Who pays?				
Who plans and makes decisions?				
Who implements?				
Who uses?				
Who owns the outputs?				

Sequencing and preconditions

Most participants felt that sequencing of investment in market institutions was useful, following the order presented at the consultation, namely: market information services – warehouse receipt system (WRS) – auctions – commodity exchanges.

Ad-hoc or unplanned investment was considered likely to lead to failure or poor performance. However, it is important to remember the uniqueness of each country in terms of location and contextual situation, and to consider this in planning MIS development. Some concern was expressed over the practicalities of trying to introduce and integrate ideas in a measured and sequenced way, because of the differing agendas of the various actors involved; for example, if a government or donor unilaterally decides that a new institution is required, this will most likely happen regardless of sequencing logic.

With reference to the list of interventions (institutions, strategies and tools; *see Methodology above*), it was considered that elements such as marketing policy support, market development

analysis, and farmer organisation could be set up independently without any adverse effects on each other.

The same was also considered the case for market information services, market intelligence, and grades and standards; however, the effectiveness and performance of this second group would be significantly improved if the first three interventions (*see* previous paragraph) were already in place. For example, marketing information would be effective even in the absence of marketing policy, in the absence of marketing studies and in situations where farmers were not organised; however, market information could yield considerably more benefit if farmers were well organised and acting on the advice of clear marketing studies and strategies.

Conversely, introduction of the more sophisticated market institutions — e.g. warehouse receipt systems and agricultural commodity exchanges — would require some of the earlier interventions to be in place.

Sustainability

For an emerging MIS to be sustainable, the appropriate institutional arrangements need to be in place; opportunistic strategies should be avoided; governments need to be involved for the ‘public goods’ aspect of the information; the private sector should pay for everything; and training (capacity-building) and universities should play a major role.

CTA priorities

CTA’s mandate covers developing and providing services that improve access to information for agricultural and rural development, promoting the integrated use of communication channels for information exchange, and building capacity (mostly through training) in the generation and management of agricultural information. CTA may also provide funding for R&D.

The Consultation identified eight opportunities for CTA to play a strategic role in niche areas of R&D investment to combine specialised information with new ICT technologies to improve competitiveness and innovation within the agricultural sector of ACP countries. These opportunities should then be developed (by CTA) beyond the pilot level for significant and sustained improvement of marketing institutions.

1. **Market information:** Conduct an impact study of the value, utility, quality and benefits of MIS in terms of client needs, accuracy, timeliness and accessibility. There should be six case studies from ACP countries, to compare those with small (10–15 million), medium (20–40 million) and large (60 million+) populations, those with strong and weak ICT capacity, and those having different levels of market engagement at local, national, region and international levels. The analysis should identify what is and what is not working well and the reasons behind their success (or failure). The case studies should include ownership, implementation and management, with a view to determining which types of management system provide the best services (including which institutions are best placed to own and implement MIS), and how they can be supported financially. The study should also cover benefit–cost analyses of the services.

The research will give better understanding of the status of MIS in ACP countries and should result in recommendations of best practices for the design and implementation of MIS that

are appropriately targeted (i.e. at small-holder farmers).

The research should also enable CTA to develop policy recommendations on public goods or private-sector financial arrangements to provide long-term support for MIS. This will enable CTA to develop an advocacy and policy dialogue process with key stakeholders in selected countries to demonstrate the importance and value of MIS.

CTA should also become involved in the building of national capacity in the provision and analysis of market data targeted to specific groups.

2. **Marketing capacity tool:** Develop an on-line marketing profiling instrument for use by ACP economic research groups, policy-makers and practitioners to self-evaluate their country's position *vis-à-vis* marketing interventions, institutions and investments. Thus, in effect, providing a 'health check' of market capacity. Areas of investigation would include: MIS capacity and competence; farmer organisation; media coverage (radio, television, newspapers); ICT access (Internet, cell phone); trader organisations; financial linkage to key agricultural sectors; storage capacity (warehouse, cold chain); research linkage to the private sector; collateral trading status (warehouse receipt; commodity exchange); and legal status.

The tool would provide a low-cost mechanism for evaluating national or regional market needs and opportunities. The information could then be used as the basis for developing plans for investment or re-engineering options to improve marketing efficiency and performance.

3. **Marketing evaluation and strategy development:** With the results of the marketing capacity analysis, CTA, its ACP partners and their service providers would be in a position to develop support packages or strategies for marketing development. The tool would help evaluate whether proposed interventions would be appropriate.
4. **Marketing support portal:** Provide an interactive information portal to support methods, tools and applications for strengthening marketing analysis, institutional development and linkage of small-holder producers to markets. Thus, CTA would act as a lead organisation in bringing the latest conceptual thinking in applied trade and marketing approaches, methods, tools and applications within a high-profile information and learning resource. Rather than dominating the activity, CTA should adopt a consortium approach bringing together other leading research, development and private-sector agencies. The information provided should be directly linked with specific iterative 'learning alliance' approaches to build a cadre of trade and marketing specialists that can build the capacity of public- and private-sector market institutions.

The portal would encourage the development of a community of practice to provide guidance in marketing, and agro-enterprise and agri-business development, including advice on strategies and sequenced areas of intervention to improve market efficiency. The portal should also support the marketing-evaluation and strategy-development tools developed (*see 3 above*).

5. **Integrating trade and market support:** Explore options to integrate the trade-based information available via CTA's Agritrade web portal with activities that support market-based interventions.

Such an integration should provide greater opportunity for dialogue and knowledge-sharing between actors involved in policy-development and decision-making and those involved in developing ACP business opportunities within specific sectors.

6. **Linking farmers to formal market institutions:** Evaluate opportunities and catalyse the process of enabling small-holder farmers to manage their risk through engaging in formal markets.

Increased formalisation in ACP markets should provide increased food-security, better risk-management, more transparent interactions, opportunities to add value to produce, and generally strengthen good business practices. However, there are serious concerns about the benefits to small-holders. More and relevant information is required to ensure that infrastructure, information and quality-control equipment is available to organised farmer associations in rural areas.

This research should evaluate the equity of benefits in the transition from informal to more formalised markets, especially in relation to small-holders and the market chains they are involved in.

7. **Best practices in farmers' organisations:** In general, the better organised farmers are (collectively), the better able they are to take advantage of new market opportunities. Studies should be undertaken to evaluate where farmers are well organised and where they are not, and the key factors and methods that influence best practice in the establishment of primary and secondary farmer organisations. Best-practice approaches should be determined for farmers with good and poor market access, and those targeting high- and low-value markets.
8. **Low-cost MIS based on cell-phone networks:** Determine where, and how, mobile (cell-phone) technology could be developed in specific ACP countries to improve the marketing opportunities for the poorer, small-holder farmers, as well as increasing marketing efficiency within and between ACP countries.

The research should provide recommendations and new innovations for the use of mobile technology in market information, trading and financial linkages (i.e. low-cost MIS). CTA and its partners will have the opportunity to design, test and privatise new services to improve the marketing performance of the poor.

Key messages from the Consultation

1. The availability of timely, accurate and relevant market information is a *critical factor* in the success of MIS; however, empirical evidence is required to back up the anecdotal evidence available — CTA should therefore support evaluations and impact studies of existing MIS.
2. Addressing the (information) needs of small-holder farmers is *paramount* for improving their ability to engage with the market and thereby improve their livelihoods. Therefore, support to MIS should be channelled through farmers and farmers' organisations — CTA may need to modify its MIS-support strategy in this direction.
3. It is *essential* to recognise and understand regional (and national) differences in the state of development of MIS and other market instruments. Thus, improved knowledge- and information-sharing is needed — CTA is to promote networking at the ACP level via Internet (web-sites), publications and other means.
4. Development of MIS and other market instruments *should* be sequential. Thus, training, knowledge-sharing and consultations may be needed — CTA to contribute as appropriate (including advocacy).
5. MIS *should* be combined with other services (e.g. advice, advocacy, financial, legal, insurance). This requires a better understanding of what is required for an enabling environment and preconditions — CTA to disseminate appropriate information.
6. Public-private sector collaboration is *recommended*. However, concerns over sustainability can influence the type of collaboration achieved — CTA to disseminate appropriate information.
7. The ownership of an MIS may or may not be an important issue. Further consultation is required on priorities and the overall approach to development — CTA could work on building consensus among stakeholders.
8. Market information may or may not rank very high in relation to farmers' other needs. Further consultation is required on priorities and the overall approach to development — CTA could work on building consensus among stakeholders and priority-setting.

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Foreword

Dr Hansjörg Neun (Director, CTA)

I am pleased to present these proceedings from the CTA expert consultation on ‘Market information systems and agricultural commodity exchanges: strengthening market signals and institutions’, held in Amsterdam, The Netherlands in November 2005.

In African, Caribbean and Pacific (ACP) countries, agricultural production systems continue to play a key role in economic development (food security, employment, income generation and social cohesion). In this context, agricultural trade and marketing are important determinants of this development process, therefore it is vital to contribute to improving the efficiency of agricultural markets in ACP countries.

The ACP countries often face market imperfections or failures that can hamper market integration and development. This is mainly due to lack of information on market opportunities, non-transparent implementation of formal regulations, or abuse of a strong market position – all common features of developing economies.

Agricultural markets that function well stimulate agricultural production. Most ACP farmers sell at least part of their production, thereby contributing to income generation and food security. Therefore market information systems, agricultural commodity exchanges and other market institutions play a critical role in this context.

CTA’s tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. Within this mandate, over the past decade CTA has been actively involved in the promotion and pilot testing of market information systems and agricultural commodity exchanges to support trade in ACP countries.

This collection of valuable visions and experiences of experts, together with conclusions from the lively dialogue sessions held during the Amsterdam meeting and the preparatory e-discussion, will hopefully provide a detailed picture of the key success stories, lessons learned, new opportunities and main challenges.

Linking ACP farmers to markets may seem to be more promising for poverty alleviation than Adam Smith’s ‘invisible hand’, and I am personally convinced that this link is one of the key conditions in our common fight against poverty. In this regard, I invite you to explore the findings of these proceedings.

Session 1

Introduction

Expert consultation on market information systems and agricultural commodities exchanges: strengthening market signals and institutions

Shaun Ferris (CIAT, Uganda), Peter Robbins (CMIS, UK) and Vincent Fautrel (CTA, The Netherlands)

Background to the meeting

Over the past 10 years, the Technical Centre for Agricultural and Rural Cooperation ACP–EC (CTA) has been actively involved in the promotion and pilot testing of market information systems (MIS) and agricultural commodity exchanges (ACE) to support agricultural trade in African, Caribbean and Pacific (ACP) countries. Results from this work were reviewed in two expert consultations, held in October 2000 and November 2001 in Wageningen, the Netherlands. In addition, CTA has supported a series of training activities with member countries and has disseminated information through electronic knowledge-sharing systems and publications.

In general, the pilot work supported by CTA has been successful in finding new ways of improving technical and institutional arrangements for gathering, storing and disseminating market information. These innovations have included outsourcing activities from state-run agencies, and enabling new public and private partnerships to enhance the dissemination of information through rural radio and mobile phones. Feedback from stakeholders now suggests that further steps need to be taken to access the economic impact of these services and to enhance the utility of the market information that farmers and rural traders receive.

Similarly, investments in the development of market outlets, such as auctions and product exchanges, have also proved successful in testing new ideas, but some problems remain, as many farmer groups are unable to use these services effectively for their commercial advantage, particularly those that are not well organised or able to produce products of a sufficiently high standard to sell into more formal markets.

This meeting was organised by CTA to review previous investments in market information and commodity exchanges from a broader perspective, to evaluate which approaches have been more successful, what are the conditions that have enabled them to function well, and how these new interventions have benefited farmers' organisations, traders and other development partners. Through this process, it was hoped to identify key factors that have supported success, and to debate issues related to new opportunities that may both strengthen market signals and provide a better understanding of the conditions required to enable smallholder farmers to gain access to new markets in a more sustainable and remunerative manner.

Market institutions in the broader institutional context

In order to place in context market institutions or interventions such as market information, warehouse receipt mechanisms and trading floors, this meeting reviewed the different types of information required by market actors, and how farmers and traders organise to strengthen market chain co-ordination. Talks from experts in their fields explored the range of market institutions, including policy options, farmers' groups, finance options, legal frameworks and commodity exchanges, to identify trends and new opportunities to strengthen the links between information and commodity sales for the rural community. The meeting also reviewed the challenges faced in current pilot site work, and evaluated these against new ideas and options.

Challenges for marketing information services

Although approaches to market information have progressed over the past 10 years, it has also been recognised that market information alone is unlikely to catalyse market supply chains. To be more effective, it has been suggested that such information should be integrated with other interventions, such as collective marketing, grading and standardising produce, and bulking supplies. Recurrent questions addressed at the meeting include the question as to whether MIS are financially sustainable; are MIS public goods? If so, should they be part of government expenditure? Should they be considered a business development service opportunity for the private sector? Or is there a justification for public-private sector partnerships?

Challenges for commodity exchanges

In the past 10–15 years there have been several initiatives by the private sector and donor-supported projects, aiming to enhance trade flows through the establishment of auctions, trade credit schemes, inventory credit and commodity exchanges. These approaches have met with mixed levels of success, depending on the products being traded and the local economic conditions and business frameworks. While some schemes have shown steady progress and become significant marketing institutions, others have suffered from the effects of political instability, thin trade and weak supporting institutions. Does this range of outcomes suggest that certain enabling conditions need to be met before such schemes can work? If so, what are they? Does the selection of a commodity make a large difference to these options? Can such schemes be government-led? Should they be left to the private sector, or are there opportunities for public-private sector arrangements that could develop more sustainable and stronger demand signals for sellers?

Purpose of the workshop

Through presentations and dialogue sessions, stakeholders had the opportunity to draw on expert opinion and discuss key issues related to the success and challenges faced by practitioners. Through this debate, greater clarity was achieved in the performance of ongoing activities, providing an opportunity to make recommendations in the areas of policy, research and development to enhance innovation, the impact of future investments, and the development of marketing institutions.

Expectations

- Gain a better understanding of how market information integrates with other market interventions and institutions.
- Gain a more detailed picture of ongoing MIS and new opportunities in marketing institutions among CTA partners.

Key areas of investigation

- Are smallholder farmers benefiting from new market institutions?
- Is the distribution of benefits equitable along the market chain in terms of farmers, rural traders, urban wholesalers and retailers?
- Does sequencing make a difference in how market institutions are established and supported?
- What is working well in the development of new innovations in market institutions?
- What is not working well in the implementation of new marketing institutions?
- How and where should development partners – especially CTA – consider investing future funds in supporting market institutions to support farmers, traders and other market chain actors?

The evolution of markets – from barter to eBay

Peter Robbins (CMIS)

Archaeological evidence of market activity dates from prehistoric times. The earliest texts from ancient Persia, China, Egypt and the Mayan civilisation record the details of transactions in agricultural produce.

Almost every form of exchange of goods and services used throughout history still co-exists in today's world. Types of exchange activity include barter, roadside stalls, fixed market places, travelling salesmen, retail stores, auctions, commodity exchanges, stock exchanges, futures markets, and online market places such as eBay. The form of the market is determined by the type of product being traded, and the number and needs of those wishing to use the exchange system, whether it is some informal exchange between individuals, or a highly sophisticated automated system that can handle hundreds of financial transactions a second.

Trade in commodities predates the concept of money – most commonly, when one type of commodity is bartered for another type of commodity. Although effective, barter suffers from problems associated with the time taken to access the value of different types of goods. Very often, it is also impractical for groups of people to exchange bulky goods of various types, quantities and qualities with other groups of people who may live at great distances from each other.

At first, exchange took the form of rare products such as cowry shells or precious metals. Such 'money', as a medium of exchange, had an advantage over barter, in that it did not deteriorate over time and could be exchanged for every type of product or service. Paper money (originally a form of promissory note) became an even more convenient exchange medium; today most transactions occur in the form of electronically transmitted account transfers. As soon as money took this semi-abstract form, its value had to be assured and guaranteed by banks and governments, which needed to be stable and dependable in order to offer confidence in the currency.

Trading also became a specialist activity in prehistoric times. Two main types of trading activity quickly evolved. Itinerant traders move from place to place purchasing goods with the money they carry. The itinerant trader then arranges for the goods to be carried to a place where he or she can sell them. Sedentary traders remain at a fixed location and pay for goods as they are brought to them. They may purchase from producers or from itinerant traders. They normally arrange the storage of the goods they have purchased, before selling them on to consumers or to other itinerant traders, who are usually responsible for arranging transport to another location. The first fixed market places in the world developed around the activities of these sedentary traders.

I use here the historical example of London to illustrate the evolution of markets, but much the same pattern has been repeated all over the world.

The informal markets that grew up around the activities of London's sedentary traders became institutionalised over a number of centuries. Large buildings were erected to house the fish market in a London street called Billingsgate. Similar large buildings housed the meat market in

Smithfield and the fruit and vegetable market in Covent Garden. These sites were adopted because they were convenient places to which produce could be brought (Billingsgate is situated on the bank of the River Thames, for instance), and where they could be reached conveniently by consumers and traders in densely populated areas where demand for the goods was high. These markets still exist, but they have been moved away from the narrow, winding streets of inner London to the outskirts of the city, where they are easier for large lorries to access, and more accessible for the docks and the motorway system.

Trust in the honesty and probity of the organisation that ran these markets needed to be strengthened by adopting trading rules and standards, which the markets' traders were obliged to abide by. The enforcement of such rules was best achieved by requiring participating traders to become members of a trading association, and by giving the institution the right to withdraw membership from any trader who broke the rules. As the loss of membership prevented the traders from earning a living, they had a great incentive to abide by the rules.

Although trust between users of any market is essential, cheating can occur more easily if there is no written evidence of the details of transactions. In order to create even more confidence in the market system, traders began to write purchase and sales contracts. Such documents were legally binding. They carried all the details of the transaction – the day the transaction was made, the quality, quantity, packing and description of the goods in question and, of course, the price and delivery arrangements. The document might also specify an agreed method of settling any dispute arising from the transaction. The wording of the contract could be corrected or amended by one party only with the agreement of the other.

Some commodities and services cannot be traded physically. Some people, for instance, want to strike a deal to buy a commodity before it has been shipped from some overseas port. They may not be able to examine the goods in question, but they may trust the overseas supplier to deliver a good quality product. Some people also want to trade in abstract assets such as stocks and shares.

In the 17th century, much of this type of trade was conducted informally in Britain by traders or 'stock jobbers', who met together in coffee houses and taverns in the famously named Exchange Alley, in the heart of the city of London. It became apparent, as the volume of trade and the number of traders increased, that coffee houses were too small to conduct business efficiently. Furthermore, as with physical markets, trust in the system needed to be assured by adopting trading rules and standards and by conferring membership on the traders that used the market. Many of these rules were instigated after events such as the 'South Sea bubble', when false stocks were circulated to unwitting speculators, leading to a seismic stock market crash.

This type of trade moved from small coffee houses to specially constructed buildings. Many of the institutions, including commodity exchanges such as the London Metal Exchange, and other types of exchange, such as the London Stock Exchange and the Baltic Exchange, still operate today, although most of the transactions undertaken are now conducted electronically. These types of exchange are not equipped or designed to handle the physical commodities. They deal in abstract equivalents of the relevant commodity or service in which they specialise. The Metal Exchange conducts transactions in warehouse warrants and bills of lading, which are documents that give title to the goods described. The Stock Exchange deals in stocks, bonds and shares issued by governments and private companies, and the Baltic Exchange deals in documents giving title to shipping space. Another function of these exchanges is to settle disputes between members. This is often known as an arbitration service which, as such systems are run by the members of the market, is a cheaper and faster way of settling disputes than going to law.

Large as the buildings were that housed these markets, they could not possibly accommodate the thousands of people wishing to trade in the assets in which the markets specialised. For this

reason, the concept of the ‘broker’ evolved. A broker is an authorised member of a particular market who conducts transactions on the market on behalf of clients. These clients may be private companies, consumers, producers or providers of services, such as cargo space on ocean-going vessels. Brokers receive instructions from their clients to buy or sell a particular asset on a particular trading session of the market to or from other brokers, who represent their own set of clients and earn, for doing so, a commission based on the value of the transaction. Clients pay this commission on every deal they transact through the brokers, and the brokers, in turn, pay for the running and upkeep of the market.

Some users of these markets may have no direct interest in the product or service, but may wish to speculate on the change in price of the product. Some markets positively encourage such speculative activity, as speculators are often prepared to take risks that other users of the market shy away from, and speculators add to the turnover or liquidity of the market, as well as increasing the broker’s revenue by the commissions they pay.

It can be seen that an important element in the evolution of markets has been the necessity to convince those using the market that they are run properly, and that the rules used to conduct trade are strongly enforced to prevent cheating. This guarantee of probity also needs to be reinforced by other trusted institutions linked to market transactions such as banks, storage companies, insurance companies and, more broadly, a trusted national legal system.

All these markets need to attract the business of producers, consumers, itinerant traders and others. These clients need to be confident that the market will not cheat them. In order to reinforce this trust, the market needs to provide a mechanism that allows clients to check the price paid for the goods they buy or sell on the market is the same, or nearly the same, as the price paid by other users of the market at the time of their transaction. This is called the ‘price discovery’ function of the market.

In a simple street market, the seller of, for instance, tomatoes can approach a sedentary trader based in the market and negotiate a price for a box of his tomatoes. The seller, however, has no idea of the price the trader will pay to the next person offering tomatoes. Furthermore, the seller has no way of knowing the price at which the trader will, in turn, sell the tomatoes to a consumer.

One way of overcoming this problem is the public auction. Here, producers bring their produce for display at a fixed location. An auctioneer, who is independent of both buyers and sellers, is employed by the auction house to conduct the transactions. Potential buyers of a particular parcel, or ‘lot’, of a commodity indicate the price they are prepared to pay, and the buyer who is prepared to pay the highest price for the lot is then committed to buying it. All this is done with all the buyers present, as well as the seller and members of the public, if they wish to be there.

These features of the auction make transactions transparent – everyone can see the transaction taking place and can note the price paid for a particular quantity and a particular quality of the product. This allows potential sellers to get a good idea of the price they will receive when they sell their goods, and prevents some forms of cheating. One form of cheating the auction has to combat is the possibility of all the buyers colluding with each other (to form a ‘ring’) to pay low prices for the goods. All auction houses have rules to punish anyone found to be involved in this kind of practice.

Auctions are a very simple concept and are relatively cheap to run. An experienced and trustworthy auctioneer needs to be employed and paid for, but, depending on the commodity being traded, the auction often does not need to be conducted in a special building. Indeed, thousands of auctions for livestock and other agricultural produce take place in the open air.

All the types of market described above not only need to offer market users the assurance that they will not be cheated, but also need to give potential clients market information, which might include the volume of trade conducted and the prices paid for the commodities and services in which the market specialises. For example, a farmer living 20 miles from a cattle auction will want to know how many of his cattle he can sell on any given day, and at what price he can sell them. If he can follow the change in the price paid for cattle traded at the auction over a period of a week, and feel satisfied that the price will not change significantly before he brings his own cattle to the auction, then he might take the considerable trouble to walk them all the way from his farm to the auction. Similarly, an arabica coffee grower in Brazil or Kenya needs to know what price is being paid in New York, the location of the world's only major arabica coffee market.

Some markets have no means of informing potential clients about the details of their transactions. Buyers and sellers are often reluctant to make the effort to bring their goods to market if they have no idea what price they will get for them. This reduces the overall volume of trade, decreases production and increases waste, which has a negative effect on both local and national economies.

Markets can increase turnover and attract more users if they can find some way of disseminating information about the market's activities – the price paid for different types of product, the volume of trade, the reason for any changes in price, the quality of goods being offered, and the origin of customers and suppliers using the market. Such information helps potential buyers and sellers to make market decisions and gives them the assurance that the market is transparent and can handle their market needs.

Once the market is established, market information of this type is, at first, disseminated by word of mouth, as market users travel to and from the market to other locations. As the market evolves, market information is also often carried by newspapers that are distributed within the market's catchment area; today such information can also be disseminated by radio, telephone links and via the web.

One limitation of fixed markets and auctions is the problem of delivering the goods to the sales area, which may be very distant from the area where the commodity has been produced, or from the location where the commodity might be consumed.

This problem has been solved in several ways. Some markets do not expect the supplier to transport the entire volume of the product they wish to sell. Buyers on that market will be presented with representative samples of the product by the seller and will base their offer price on the quality of that sample. They will only do this, however, if they can be fully assured that the sample is truly representative of the seller's goods. This can be achieved by engaging the services of an independent specialist sampling organisation. There are many such companies in developed countries, which often not only arrange to draw representative samples but also have the laboratory or testing systems to analyse the quality of the product. Many developing countries have few such facilities.

Once a buyer has agreed to purchase goods based on the assessment of the sample, he or she will want to be assured of their ownership of that particular parcel of goods. The buyer needs to know of its exact location, and that those who are storing the product will be immediately prepared to deliver it to the buyer or his agent.

This problem has been overcome in many countries by companies that specialise in running warehouses. These companies allow themselves to be inspected independently, to demonstrate to potential customers that their warehouse is secure from theft, that their staff are honest, that they

have the necessary funds to meet customers' claims for errors they might make, and that they have an efficient system for registering any change of ownership, even though the goods remain in the warehouse.

Such warehouse companies are often equipped to issue documents of title to the different parcels of goods they are storing. These are known as warehouse receipts, a kind of certificate that gives details of the weight or volume and description of the parcel of goods, as well as the date the goods entered the warehouse and the current owner of the goods. These documents can be made transferable from one owner of the goods to the next, simply by one owner signing and dating the document to endorse the change of ownership from him or herself to another named party.

With the advent of warehouse receipts and other types of documents of title, such as bills of lading (which are also documents of title but represent goods on route aboard a ship and guaranteed by the shipping company), it became possible for markets to trade in the title to goods, rather than the goods themselves. Trading activity could now take the form of people buying and selling pieces of paper, which represented the goods. Such an opportunity attracted the interest of speculators. As the price of these goods rises and falls over time, money can be made by buying the product when the market price is low and selling it when the price is high. The speculator does not need to own warehouses, lorries or testing laboratories, and will never need to see the goods represented by the title documents, but can still actively trade in these markets.

The effect on a market of speculative activity can be both positive and negative. In periods of shortage, especially of staple food commodities, the activity of speculators can be disastrous. They can buy all the surplus food, knowing that the population will have to either pay very high prices or starve.

It may be, however, that a farmer needs to sell his product very quickly to pay off a debt or to purchase items for his farm. It may also be that there are no ordinary buyers for the goods, such as shopkeepers or traders in the physical product, at that particular moment. The speculator might be very willing to purchase the goods, albeit at a low price, if he believes the price will increase in the future, when shopkeepers have run out of stock. This type of speculative activity adds liquidity to the market and allows trading activity to continue in times when demand or, alternatively, supply is at a low level.

Another facility offered by speculators is linked to their ability to 'sell short'. Selling short simply means selling something that you do not yet own. For instance, say a speculator discovers in May that many more farmers are planning to grow cotton in the next season compared with the previous one. This unexpectedly high supply of cotton is likely to have the effect of depressing cotton prices in September, when the cotton is harvested. Let us also suppose that this speculator knows of a textile company that will need to buy cotton in September. The speculator will probably be more inclined to make a sale in May to the textile company at a lower price than, say, a trader with existing stocks. If the speculator's assessment of the future market price is correct, he can wait until the September harvest, purchase the cotton at a cheaper price than he sold it to the textile company, and make a profit.

This type of trading activity became institutionalised in the form of futures markets. A number of the largest commodity exchanges in the world, including some of those for agricultural products – coffee, cocoa, sugar, rubber, wheat, maize and palm oil – are futures markets. Suppliers and consumers can buy or sell the commodity a year or more into the future. The exchange specifies the minimum quality of the commodity and the location of the registered warehouse to which it must be delivered. In practice, only a very small number of transactions on these markets

represent the movement of the commodity in its physical form. Much of the trade is speculative, and much of the rest is known as hedging deals.

Hedging is another facility offered by certain types of market. Hedging has become a highly sophisticated activity, which includes the purchase and sale of options that are not a straightforward purchase or sale of the commodity but a purchase or sale of the *right* to buy and sell at a particular price and date, which may or may not be exercised, depending on the way the price moves.

This is not the right place to go into details about how options and other market derivatives work. The normal form of hedging is, however, quite simple in principle. The producer of large quantities of a commodity may not want to take the risk of the market price of his product falling between the time when he plants it and the time when he harvests it. The futures market offers him or her the opportunity to make a sale at a fixed price for delivery at the time of harvest, even though the transaction was made at planting time. Conversely, a large processor of the product may not wish to take the risk of the price of the raw material needed (to make the processed product) increasing between the time the sales order for the processed product is received and the time of delivery of the raw material. In this case, he or she can make a purchase on the futures market for the quantity of raw material needed, for the time they are needed in the factory.

It should be noted that futures markets are designed to deal in bulk commodities that can conform to very specific quality standards. The minimum value of a single transaction is usually in excess of US\$10,000.

In very recent years, the advent of the Internet and satellite communication technology has offered a completely new type of trading system – the online market place. Any number of sellers can communicate details of the product they want to sell with any number of buyers – provided all these parties have an Internet connection. There are now a number of private companies and a number of development organisations that have set up dedicated trading sites on the web. Trust in these markets depends on whether the online market is prepared to guarantee the transaction to both buying and selling parties, and whether they have the ability to do so.

Conclusions

All farmers in developing countries are now being encouraged to produce more surplus goods for sale. The size, location and output of farms in these countries varies enormously, however. The exchange system used by these different farmers has to be suitable and appropriate for their needs.

In almost all farming areas in almost all ACP countries, individual farms are small. Although they do exist in ACP countries, large farms like those on the American prairies, or smaller, highly productive, specialist farms like many of those in Europe, are the rare exception. Most farmers in ACP countries are poor and cannot afford to employ modern farming technology using expensive machinery, farm chemicals and weatherproof, pest-proof storage facilities. As credit is difficult to obtain and storage facilities are rare, most farmers have to sell almost as soon as they harvest their crops. Although the cost of electronic communications systems used in some marketing systems is falling, most farmers are too poor to acquire the technology for themselves.

Existing exchange systems, such as barter, roadside stalls (when farmers are near a busy road), village markets, local auctions and the activities of itinerant traders, may represent the most appropriate exchange mechanisms for large numbers of typical small-scale ACP farmers.

As no contracts are drawn up, no banks are used, no products are insured, no quality standards are imposed, and no formal market information is disseminated, such informal markets can be conducted by the users of the markets without outside assistance. Any disputes can also be settled within the community in which these transactions take place.

However, larger and more organised production can increase efficiency if there is access to more modern systems of exchange. Some argue that the very presence of more modern exchange systems might encourage larger and more productive farming. It should be said, however, that in almost every historical case where more sophisticated exchange systems have evolved successfully, the systems were established by the users of the markets and not by outside agencies. As production units became larger, and as the quality of products became more homogeneous, it became possible to modernise exchange systems. This development evolved simultaneously with the establishment of trusted banking, insurance and storage companies and with governments establishing robust regulatory bodies and legal systems.

The questions that need to be asked when considering the establishment of new kinds of markets in ACP countries might include the following.

- What proportion of typical ACP people benefit from other, perhaps more sophisticated and more expensive exchange systems?
- Is there sufficient enthusiasm among a sufficient number of people to justify the establishment of a new market system?
- Is there enough potential trade in any commodity to justify a new market system and to provide the necessary turnover to pay for its establishment and running?
- What research evidence is available to demonstrate that a more sophisticated market system, designed for larger farmers and traders in the same country, could produce a 'trickle-down' effect that could in some way be of benefit to these typical farmers?
- If such evidence is available, should these people be expected to pay for the more sophisticated system?
- Could any development agency or government funding be better used in improving the market environment in the country – for such things as the building of fixed place markets, roads, storage facilities, providing credit, enforcing trading rules, training in marketing or MIS, for example – rather than in the establishment of the new market system?
- Does the country have the necessary business infrastructure – a trustworthy banking system, legal profession, regulatory framework, communication system, testing laboratories, warehouse companies, insurance companies, white collar crime policing – to operate the new market system successfully?
- What kinds of problems are likely to be incurred if the new market system is established without some, or all, of this business infrastructure in place?
- Are the necessary skills available to run the market?
- What measures could be put in place to discourage market speculation by people who could not afford any potential loss?
- Could the mechanism of the new market system be used for nefarious activities, such as tax evasion?

- Is the government of the country in question being pressurised to participate in the establishment of the new market system, either by traders who could afford to establish the new system themselves, or by outside agencies that are not fully aware of the difference between the agricultural market profile and available resources of the country, compared with those of countries where such systems have proved to be appropriate?

Findings from the preparatory e-discussion

Shaun Ferris (CIAT) and Peter Robbins (CMIS)

In the build-up to this workshop, participants, many of whom were not able to attend the meeting, were invited to join a pre-conference electronic discussion group. The e-discussion was held through a Bellanet Dgroup, and can be accessed through www.dgroups.org/groups/cta/mis/index.cfm

The e-discussion commenced on 1 November 2005, with discussions facilitated by, and based on, a series of stimulation notes prepared by the expert speakers. The e-discussion introduced the thematic areas of the conference, and provided an opportunity for partners to share information on the topics that would be presented and further debated at the conference. During the course of the e-discussion 120 participants were registered on the site, which received more than 250 messages over the 3-week period. Participants represented a wide range of institutions and sectors from research, non-government organisations (NGOs) and the private sector.

The purpose of the e-working group was to introduce the expert speakers to the thematic areas of the conference, and to enable the wider audience to raise issues and put forward ideas on innovations in marketing institutions in developing countries. Through this mechanism, it was hoped that participants would arrive well prepared for the meeting, having had an opportunity to learn from past experiences and consider fresh viewpoints.

The outputs from the e-working group were used in defining areas for further debate at the conference and in assisting speakers to address important points raised. The following is a summary of the major points raised in the e-discussion.

Week 1: Globalisation, policy and farmer perspectives on market institutions

- **Liberalisation:** the main sentiment with regard to market liberalisation was that large-scale farmers and large formal traders are gaining most from the liberalisation process. Smallholders are being marginalised due to limited market access in overseas markets, and increased competition in domestic markets.
- **Domestic tariff protection:** to support smallholder markets and avoid dumping, ACP countries should be able to protect their fledgling agricultural markets using tariff options, without censure by the World Trade Organization (WTO). At the same time, countries of the Organisation for Economic Co-operation and Development (OECD) should accelerate their reform programmes to reduce internal subsidies for agricultural products, such as cotton, sugar, rice etc., where farmers in developing countries have a comparative advantage, and to increase market access for poor developing countries.
- **Falling commodity prices and supply management:** the collapse in prices of traditional tropical cash crops over the past two decades was noted as a major problem for the economic

and growth prospects of smallholder producers in poor countries. Measures proposed to counter this problem included the need for industrialised countries to reduce their export subsidies and to find effective ways of assisting the poorest countries to access OECD markets. The concept of supply management was raised as a possible means that producers could use to reduce market price volatility and raise commodity prices in some cases.

- **Productivity focus leads to oversupply:** the issue was raised of development funds being too focused on increasing productivity, which further contributes to overproduction and falling commodity prices. According to one participant, studies have shown that increased productivity of food crops is required to raise competitiveness, and that productivity gains are an essential growth parameter. History shows, however, that industrial countries were able to develop successful non-agricultural economies as a first step to increasing farm productivity, but that this was achieved by protecting their agricultural sectors from outside competition. There is mounting evidence that an emphasis on export-led growth in many ACP countries has led to the overproduction of cash crops, causing significant price reductions and an increase in the volume of imports of food products. This has led to a treadmill situation where many farmers are obliged to raise their production levels, simply to maintain a constant income level or retain as much as they can of a dwindling return. Many participants suggested that the current situation of oversupply calls for a greater focus on diversification, value addition and market protection, rather than productivity.
- **ACP to conduct more aggressive trade negotiations.** It was noted that ACP farmers produce over 200 different types of commodity for export – including coffee, cocoa, cereals, pulses, gums, waxes, livestock, spices, natural fibres, vegetable oils, medicines, food additives, tobacco. These are products that the rest of the world is reluctant to do without. Therefore the ACP countries should negotiate more aggressively at trade talks. Frequent questions were put forward as to why this was not being done.
- **Differentiated client types:** one of the problems raised in terms of market access was that different clients need different types of marketing support. It was generally agreed that the larger and more specialised farmers were able to use marketing services the most effectively. This group can also pay for market support services. However, it was argued that all farmers are capable of taking up opportunities offered by a more market-oriented environment, and the vast majority of farmers are smallholders. Points raised included the following.
 - Larger farmers can readily benefit from modern innovations in information technology, expanding their financial options through warehouse receipt systems, and more speculative trading options through commodity exchanges. Members of this group have access to financial support and are often integrated with well established buyers. Larger farmers deal in bulked, higher-value products, which are sold into well defined markets.
 - Medium-sized farmers are less well capitalised, but can respond to new innovations when market conditions are not too volatile. Members of this group may not have strong links to formal financial support and often require additional training to keep pace with larger-scale farmers.
 - Smallholders need more local and often simpler market-support systems. Smallholders have few links to finance, often have relatively low levels of education and, after the collapse of government cooperatives, have few links to other farmers. Despite these problems, these farmers can be more competitive in the market if they are given some

form of market support, some of which is likely to be considered as public goods services.

- **Role of traders:** many comments reflected the poor image of traders in the eyes of many participants and people in the public sector and in the development world, the unfortunate ‘Shylock³ syndrome’. Traders are considered to be unscrupulous, unprincipled and deceitful; being only too willing to take advantage of the unorganised, particularly when they are in most need. To counter this belief, several participants commented that traders offer an essential service to rural communities; often face great risk in their business; and there are clearly many problems of regulation and honesty in the market place. All these comments suggest the need, generally, for better dialogue between traders and producers and their service providers. The problem of determining who is offering sound goods and services is also an issue involving improving regulation, using standards and applying the basics of good governance in the market. A major challenge is whether the market players are interested in, or can afford, such reforms.
- **Strengthening farmer groups:** the most popular method of promoting smallholders in the market place was to assist them to be better organised. Many participants mentioned the benefits of farmer groups, which would enable smallholders to achieve better economies of scale and better produce prices if they harmonise farming practices and collectively market their goods. In addition, it is easier to provide groups of farmers with services such as extension, training, credit and market information, and to apply business skills.
- **Rural finance:** credit was raised as an impediment to a farmer’s ability to produce and trade more effectively. The question of lack of land titles was also mentioned as a barrier to accessing formal credit. However, the traders suggested that lack of land titles or formal credit did not prevent business going ahead. The traders also suggested that warehouse receipts were an easier system to value and therefore likely to be a preferred form of collateral for credit providers.
- There was no mention of savings schemes as a way of raising capital for smallholder farmers, and this question was raised in the financial talks given at the meeting. The expert speakers were asked to discuss the role of savings and internal loans schemes as ways for smallholders to raise sufficient capital to invest in farming enterprises.
- **Business skills:** several comments were made on the need for smallholders to receive more business training, with a focus on profitability rather than productivity, and better access to technologies appropriate for them. Other ideas included finding ways to improve productivity, timing sales to obtain best prices, better handling of produce, and finding ways to raise quality standards.
- **Quality of services:** MIS were considered to be of poor quality in most developing countries; however, a second generation of MIS were described as being far better. The differences in these new services consisted not in the type of information supplied, but rather in the management of the services, and their ability to provide these services more efficiently.
- **Information and communication technologies:** it was suggested that ICT will not solve the difficulties of providing universal MIS to the millions of atomised smallholder farmers. The

³Shakespeare portrayed the merciless demands of the cruel trader in Shylock, a character in *The Merchant of Venice*.

use of websites was not mentioned as a key component in MIS strategies. However, there has been considerable investment in web-based information services. The question was raised as to whether this was simply due to expediency and profile with respect to donor agencies. These challenging questions were put to the ICT marketing information experts, for them to answer in the next week, and at the workshop.

Week 2: Market information services

- Participants described two levels of market information: the more traditional types of service, and those that have been outsourced. The differences were described as follows.
 - **First-generation MIS:** mostly government-controlled services that focus on gathering price data for use by government and large institutions. These systems had poor dissemination methods, were not innovative and generally failed to meet the needs of smallholder farmers, which they were originally intended to support. Funding source: government and donors.
 - **Second-generation MIS:** a new set of MIS that are generally run by NGOs, such as those in Mali, Senegal and Uganda. These services focus on the producers. These systems are flexible, use several types of new communication technology, and are linked to both national and regional MIS. Funding source: donors and private sector.
- **Radio:** virtually all contributors agreed that radio was the most effective means of disseminating simple market information to the farming sector. Limitations included:
 - in some countries radio broadcasting has not been liberalised, and access to information is poor, or is not considered impartial
 - in other countries there are too many stations, which makes it difficult for farmers to follow one information source
 - radio is a mainly one-way information flow
 - broadcasting costs can be prohibitive, thus most MIS are financially unsustainable in terms of their dissemination strategies – radio costs are up to 50% of an MIS budget.
- **Ownership:** in some countries there has been a major shift in who owns an MIS, away from government control to NGOs that provide national MIS. The participants suggested that the private sector should also provide MIS, as is the case in industrialised nations. However, although smallholder farmers are the biggest private sector group in ACP agriculture, it was suggested that they have neither the time nor the skills to run an MIS. This begs the question of how MIS can be made relevant to meet farmers' needs without farmers' participation in the management and development of such services.
- **Mobile phones:** there was much interest in the use of mobile phones as a means of gathering and collecting information, and also of acting on information, through direct communications. In many developing countries, mobile phones are considered to be more useful than computers, and certainly more accessible. Growth in the phone market has superseded computers in providing access to information and people through the Internet. The use of short message services (SMS), the ability to relay photos and to use phones for business and financial transactions, all suggest that phones are an essential trading tool for the future, and that smallholder farmers are part of, or can become involved in, this new way

of accessing the information highway. Several studies have shown that where mobile phones have been introduced successfully, many farmers can access phones. However, due to the size of some countries in Africa, there are also a number of areas that do not yet have access to, or cannot currently afford phones. Some traders use SMS to inform farmers. This brings up the question of the different levels of access to information between farmer and trader, and how the effects of those differences can be minimised. But it also underscores the fact that the two-way nature of the phone makes it a powerful piece of equipment.

- **MIS content:** a recurring question for information providers was whether there was only demand for market information that includes prices, volumes, locations, etc., or whether market information could be extended to include *marketing* information. This might include the results of market research, changing patterns of consumption, quality standards and inputs.
- **MIS sustainability:** a report from Côte d'Ivoire outlined the useful work of the local MIS, including its function in food security analysis, but also raised the issue of lack of outside support and lack of funding to maintain the sustainability of the existing MIS. Several studies have shown that many of the MIS set up in the 1970s have collapsed due to lack of sustainable financing.
- **Utility:** some participants suggested that even if smallholders receive market information, they do not know how to use it. Therefore the utility value of providing market information is small. This is an issue that is unclear and needs further analysis to ascertain. There needs to be a greater co-ordination of discussions between farmers, policy-makers, agricultural development theoreticians, traders, funding agencies, government agencies, service providers, radio station managers and, perhaps, advertisers, to decide just how useful radio broadcasts of market information are, how programming can be improved and made appropriate for ordinary farmers, and how broadcasts could be funded.
- **Linkage of market information to groups:** participants suggested that when farmers are organised into groups, they can take advantage of market information more effectively. Groups could more easily afford mobile phones and, by buying in bulk, get cheaper inputs. Similarly, graded, bulked produce would also gain value in output markets. The issue of building social capital in farming communities was a much-repeated subject.
- **Market information services can work:** one participant gave a strong endorsement of the need for, and utility of, MIS to support smallholder farmers, based on a recent review meeting. Guidelines from this work found that MIS were a public good, and that it made good sense to invest public resources in such services. MIS cannot work only with private sector funds; however, there can be assured financial sustainability through a combination of public- and private-sector support. Incentives for improving MIS can be developed, but the search for improvement is a persistent journey. Regional MIS cannot substitute for national MIS.
- **Policy:** several participants raised the need for greater focus on developing policy frameworks that supported the ability of farmers to become more organised and be able to trade in a more equitable environment. These policies need to be at the micro-, meso- and macro-levels, so that farmers can address impediments to their ability to produce, co-ordinate in more market chains, and sell into buoyant and growing markets. At present there is considerable confusion over the policy mixes that will favour the smallholder agricultural sector, despite the importance of this sector in the economies of most developing countries.

Week 3: New approaches to trading enter the commodity exchange

- **No obvious winner:** the debate in week 3 moved onto the potential for ACP countries to adopt more sophisticated marketing institutions to boost economic growth in the agricultural sector. Advocates argued that reforms at the market level, such as auctions, warehouse receipts and commodity exchanges, would lead to increased prosperity for all actors in the farming sector. Sceptics suggested that many preconditions had not been achieved to enable such mechanisms to operate sustainably, and that the benefits in the short- to medium-term would not accrue to smallholders, but would be skimmed off by the larger-scale farmers and traders. Many sceptics thought that, in most countries, such measures were not applicable to the local context, and would fail.
- **New models emerging:** the Southern African Commodity Exchange (SAFEX) is operating a successful agricultural commodity exchange (ACE), which operates on the Johannesburg derivatives market. SAFEX trades in maize, soya beans and sunflower seeds. Zimbabwe had a growing commodity-exchange platform until 2002. Several governments in ACP countries, including Kenya, Uganda, Zambia, Malawi and Ethiopia, are working towards developing commodity exchange-type models to increase the market efficiency of selected commercial crops such as coffee, tea and maize. There is also interest from NGOs in developing more localised warehouse and finance schemes. New marketing options being considered by governments and NGOs include auctions, partial-payment warehousing, brokering of commodity information, commodity-awareness websites, warehouse receipts, and derivatives markets. Benefits of the new systems include:
 - a reliable and accurate mechanism for price discovery
 - rapid and transparent means of bringing willing buyers together with willing sellers
 - means of increasing finance into the agricultural sector
 - means of increasing greater formalisation in to the market, including grades and standards, and reliable services
 - means to reduce post-harvest losses, as unsold goods can be deposited securely in a registered warehouse where its quality can be assessed and guaranteed.
- **Intermediate stages:** it was reported that in Latin America there are local warehouse systems where sellers are given a prepayment for goods deposited in a registered warehouse, pending full payment at the time of sale. In the example given, the warehouse was buying for larger retail operators and therefore had sound incentives for buying quality goods. These buyers were also able to provide partial payments on delivery, due to the confidence of banks in their contracts with recognised retailers.
- **When to invest in new trading institutions:** most participants recognised that, at a particular stage of market development, these new trading and marketing institutions were relevant and useful. However, the question remains as to how to identify this particular stage, and how and when to introduce the various functions of these institutions. Are there any preconditions that need to be met before a new trading platform can work effectively, and is sequencing of these conditions important? These are particularly relevant questions in Africa, where donor funding is very limited.

- **Question of who funds:** if, as has been asserted, larger-scale traders and farmers are likely to benefit most from the development of warehouse receipt schemes and ACEs, is this a problem for the development group? It was suggested that, as long as the sector as a whole gains, investment in this type of trading institution should be pursued. This issue raised the question of targeting. If the funding for a new trading institution is to come from the donor group, and their policy directives are to support the poorest segment of the agricultural sector, is an ACE a justified investment? If the government is investing in this type of institution, can it be sure the gains will be reinvested back into the agricultural sector, and will this investment support more than the larger-scale producers? Based on these questions, is there a need to evaluate the impact of such an investment on specific beneficiary groups prior to making such an investment decision?
- **Esteem versus value:** the cost of the Ugandan exercise to design and establish a warehouse receipt system or trading floor is €2 million, one-third of which will be used to pay technical assistance companies. This is equivalent to 30 times the cost of the annual budget for Uganda's national MIS. Some participants believe that ACEs and warehouse receipt systems are seen as modern and prestigious projects by donors and governments, whereas fully functioning MIS are 'invisible' and therefore cannot be used as a showpiece for development.
- **Return of the wholesale market:** some participants felt that large wholesale markets, when properly regulated, fulfilled most of the functions of a commodity exchange. One participant suggested that, unless volumes of trade were above 1,000,000 mt, an exchange was unnecessary. Wholesale markets have deficiencies, in that they lack the openness of commodity exchanges, which prevents them from being used as a price-discovery mechanism. Wholesale markets can also suffer from problems, including collusion and the intimidation of new entrants. However, if there are only 20 traders working on a commodity exchange, the potential for insider trading and market fixing is also high.
- **Where exchanges work well:** the best examples of ACEs are in countries where there are a significant number of large farms. Participants provided the example of one farmer group in Zimbabwe being able to supply 100,000 mt of maize in a season. SAFEX is also a strong marketing institution that is providing an effective market signal and a means of increasing trading efficiency. While SAFEX continues to grow within a sophisticated and well regulated economy, the Zimbabwe Agricultural Commodity Exchange (ZIMACE) failed when the land of the large farming community was expropriated. The question then remains, can the functions of these institutions be made useful for, and compatible with the interests of, smallholder farmers producing 500 kg of maize a year?
- **Sustainability:** one participant raised the question of the sustainability of new market institutions. Donors are reluctant to fund a project for more than 3 or 4 years on the assumption that, once shown to be successful, a project will be taken on by the private sector so as to make profits from the system, and therefore sustain them thereafter. Is this a realistic assumption for, say, MIS for very poor farmers? This problem also applies to the intermediate exchange systems, where information on trade is brokered, but commissions do not cover costs of the service.
- **The trade policy environment:** in the last week of the e-discussion, the marketing policy debate re-emerged as new participants joined the debate and provided their views on this subject area.

- **Commodity prices:** participants were asked to remember the question of the absolute price of tropical commodities. At present, prices of the top 20 traded tropical commodities are trading at a fraction of 1980 levels, in real terms, and none of the systems discussed will do anything about overproduction, especially of cash crops, which has caused these prices to collapse.
- **Market concentration:** apart from the strong recommendation that farmers should be encouraged and supported to market their products collectively, the institutions discussed in week 3 will do little to combat the effects of market concentration among traders, processors and retailers. The effects of market concentration are ominous in terms of fair trading and competition along key market chains. For instance, in 1980 at the wholesale level, there were more than 30 large-scale traders in cocoa working in London alone. Today, just four companies, Archer Daniel Midland, Barry Callebaut, Cargill and Hosta, account for 40% of global cocoa processing. Around nine companies account for 70% of total capacity. The same effect is happening at an ever more rapid rate in the retail sector. Whereas there were hundreds of different retail companies working in the UK, selling goods to customers, now there are only a handful of supermarkets that perform the same market function. In the UK the retail market is currently dominated by four or five retailers including Tesco, Sainsbury's and Asda. In the UK, Tesco alone has a 40% market share. This situation is repeated globally, and means the prices and methods of production for smallholder and medium-sized producers is based on the strategies of these companies. At present the small-scale producer receives, typically, only one half of 1% of the final retail price in the country's consumer sector, and in many cases the value of these goods at the farm gate is declining. In contrast, the profits for both transnational wholesalers and major retail houses are growing on an annual basis, and margins for some products, such as speciality and branded coffees, are considered by many observers to be excessive.
- **Markets and products:** the comments made in this discussion raised more detailed questions about how to improve markets. These relate to the differences between the needs of large-scale and smallholder farmers; the difference between the markets for products for domestic consumption and those for export; the special possibilities for improving the markets of bulk crops such as grains, pulses and coffee (commodity exchanges, etc.) and the lack of those possibilities for the 200 or so other ACP agricultural products; and the different ways in which food commodity markets can be improved compared with how we look at cash crops.
- **ACP countries similar to USA?** A late comment was made, which also asserted that the sophisticated MIS, warehouse registration and commodity exchanges in the USA evolved out of a simple agricultural sector of the type we find in many African countries today. Can we learn from these experiences, or are the historical, geographical, cultural and economic conditions in Africa and other ACP countries so different that a new approach is needed? Has the process of liberalisation gone too far, as some African countries now argue? When US farmers and traders began their march towards a successful, modern, mechanised agricultural sector, their industry was given larger amounts of government assistance, control and market protection than most African farmers are given today.
- **The sequence issue:** in the e-discussion a number of tools and strategies were under scrutiny, including the following list of marketing tools, strategies and institutions that can assist in making markets more structured, in defining the conduct of participants, and in enabling efficiency gains that will monitor the market performance more effectively:

1. strategic policy framework for marketing
2. sector-specific studies for investment
3. farmers' organisations
4. market information
5. market intelligence
6. grades and standards
7. legal framework to facilitate trade
8. financial framework to facilitate traders
9. support to private-sector trade organisations
10. inventory credit (warehouse receipts)
11. commodity exchange
12. advocacy for each stage, and evaluation of success.

These issues and ideas led to the defining of some areas in which the conference should seek resolutions.

Key questions that the conference hopes to answer include:

- **sequencing**: is sequencing important in terms of developing and applying elements of an efficient marketing system?
- **conditions**: are there any preconditions necessary for these strategies to work in support of the smallholder farmer?
- **context**: in what ways do the marketing tools and strategies have to be adapted to work effectively in different ACP countries?
- **leadership**: who should introduce these tools or strategies? how should they be funded?
- **linkages**: should these tools, strategies and/or institutions be introduced as single entities or clustered to make efficiency gains?
- **priorities**: where should CTA invest?

Session 2

Setting the scene

The new trade environment and the plight of smallholder farmers

Peter Robbins (CMIS)

This paper focuses on the position of typical, small-scale ACP farmers from the global point of view, and aims to highlight how global influences have altered the farmer's position over time. I want to outline the main changes that have affected smallholders, and the various strategies being proposed for improving the position of small-scale farmers in the light of these changes. This paper refers to changes that have occurred since 1980.

Why 1980? Because 1980 marks the beginning of the latest wave of economic and trade liberalisation, which has heralded most of these changes, and the beginning of an escalation of innovation in ICT. Let us talk first about the effects of changes in economic thinking.

The list is long, but the major changes include the application of economic structural adjustment programmes, the ending of price-stabilising functions of international commodity agreements, the dismantling of most state-controlled marketing boards, the cutting of taxes, the acceptance of export-led and trade-led development, the partial reduction in the tariff barriers and farm subsidies of developed countries, and the pursuit of income-generation strategies for many subsistence farmers.

Then there have also been major changes in the commercial links between the farmer and the consumer. Throughout this period, the number of trading companies dealing in agricultural goods, processors and retailing chains has been reduced significantly through a process of acquisitions and mergers.

There have also been significant technical changes during this time, many advances in farming technology affecting even the smallest farms, including better varieties, better ways of storing products, better protection of livestock from diseases, etc.

Communication systems are incomparably better. FM radio stations, mobile phones, e-mail and the Internet have made it possible to transfer huge amounts of information between any two points on the planet instantaneously and at very low cost. Let us look at these changes in order.

What benefits were ACP countries supposed to derive from the liberalisation of markets?

- Because developing countries were deemed to have a 'competitive advantage' in agriculture (because of climate and cheap labour), they were capable of increasing exports (especially if tariff barriers to consuming countries were lowered).
- Exposing industries in developing countries to outside competition would make them more efficient.
- Reducing government's role in marketing would allow private-sector people to compete with each other and become more efficient than equivalent government institutions.

- Cutting government taxes would lift a burden from the private sector and therefore make it more profitable, giving a better opportunity for increased investment.

The strategy has been successful for some farmers and not for others.

Supermarkets in London are full of Kenyan fruit and vegetables. I can buy flowers from Ethiopia, dried fruit from Uganda and ornamental plants from Jamaica. This would not have been possible 25 years ago – so some ACP farmers are clearly benefiting. From my observations in British supermarkets, countries such as Brazil, India, Israel, Argentina, Colombia and Thailand have also massively increased agricultural exports, especially in more sophisticated semi- and fully processed goods.

The success record of this strategy from the smallholder's point of view is decidedly patchy, however. Since international commodity agreements ceased their price-stability function, prices have collapsed to a fraction of what they were in 1980, in real terms.

Marketing boards have gone, so governments cannot tax farmers on exported goods in that way any more, but now farmers have to negotiate with traders from a position of weakness and market ignorance. Local prices are now much more volatile than when marketing boards controlled prices.

Farm credit (which might once have been available, in kind, from marketing boards) is unavailable for small-scale farmers in most ACP countries.

Heavily subsidised agricultural products from wealthy countries are being dumped on ACP markets, thus undermining local producers.

There is very little inward investment (and very little local investment) in facilities to add value to agricultural goods, because developed countries have already perfected processing techniques.

Government interference has been reduced, but so have government services in such things as extension services for poor farmers.

The requirement to concentrate on cash crops for exports means that many countries have to import more food.

In short, most small-scale farmers have been unable to take advantage of the liberalisation of markets because they:

- do not have the economies of scale to compete internationally
- cannot meet quality standards
- have no access to investment to improve their production
- suffer from very low prices
- have no access to appropriate market information
- are in a weak bargaining position.

Market concentration

The most important change in the chain of commercialisation has been the reduction in the number of trading, processing and retailing companies. In 1980, for instance, there were more than 30 large-scale traders in cocoa in London alone. Today, just four companies, Archer Daniel

Midland, Barry Callebaut, Cargill and Hosta, account for 40% of global cocoa processing. Around nine companies account for 70% of total capacity.

This means there is less competition between the major buyers of the products produced by small-scale farmers. The local trading companies, which now undertake the function of the dismantled marketing boards, not only lack the market power of the marketing boards, but also have as much interest in buying at cheap prices from farmers as they have in selling at high prices to the massive international trading companies.

On domestic markets, the picture is different for each country and each commodity, but there has been a much slower rate of market concentration among local traders. The almost instant change-over from a centrally controlled agricultural market to one run by the private sector has meant that, in many countries, a fully efficient, competitive market has not yet evolved. In addition, the traditional method of small-scale farming means that rural populations are thinly dispersed, with each farm producing only a tiny surplus of products for sale.

This often means that, in some locations, there is only enough business for one trader. There may be thousands of small-scale traders, instead of a few very large ones, as in developed countries. This means that there are often as many as five or six intermediaries between the producer and consumer. Each has to take a profit and each incurs handling costs. The net result of these changes is that in many ACP countries, farmers are paid too little and consumers pay too much.

Income-generation strategies

Another important feature of recent agricultural development strategy has been to encourage subsistence farmers to produce a surplus for sale. The impact on the rural economy varies between countries, but when these surpluses are of cash crops, the result has often been to contribute to global overproduction and collapsing prices. With increasing populations and more frequent shortages of food in developing countries, however, this strategy can have very positive benefits, not only for farmers but, through a multiplier effect, also for the general economy.

A less successful strategy has been to encourage farmers to diversify: to grow a new product when the market price of their traditional crop has fallen. In too many cases, as with diversification into vanilla, the result has been to spread the problem of overproduction in one commodity into overproduction into many more.

In order to take advantage of the opportunities that have occurred through the adoption of export-led development policies, ACP countries now have to produce more agricultural goods that meet high international quality and safety standards. Although many larger-scale producers have risen to this challenge, most typical, small-scale producers do not have the know-how or resources to compete in this area. Even if they could, local testing laboratories and certification authorities are scarce and expensive.

So – how do we proceed from here to where we want to be? What are likely to be the most useful strategies for increasing the welfare of most ACP farmers?

International issues

Let us review the international arena first. At the WTO meeting in Hong Kong later this year, the central debate will concern a reduction of import tariffs on agricultural products by the wealthiest countries in return for developing countries opening up their markets further to services and manufactured items from developed countries.

Such changes will give the greatest benefits to large, comparatively wealthy, temperate countries that have large agricultural sectors – Australia, Argentina, Brazil and Canada. These countries do not subsidise their agricultural sector very heavily and rely on modern agricultural technology and enormous farms to retain competitiveness. They want to supply the USA, EU and Japan with more grains, oilseeds and meat.

Some ACP countries might benefit from wealthy countries lowering their tariffs on sugar and cotton, but those ACP countries that presently enjoy EU Lomé/Cotonou trade concessions on sugar and beef could be seriously disadvantaged by these changes, especially if they also lose the protection they now have for their embryonic services and manufacturing industries. The WTO has already curbed the advantages that ACP banana producers had on access to the European market.

The WTO has taken up the problem of market access for sugar into Europe and cotton export subsidies in the USA, and some ACP countries are likely to benefit from increased market access to these goods.

Six African countries have submitted a proposal for the clarification of WTO rules covering measures that developing countries might take to reinstate international commodity agreements to end over-supply of tropical commodities and thus to increase prices. Their proposals also ask for clarification of measures that might be taken to combat the negative effects of market concentration and to end the dumping of cheap, subsidised agricultural commodities from wealthy countries on the markets of developing countries. If such measures were introduced, they could greatly benefit ACP countries and would be worth many times the total aid receipts of ACP countries.

ACP/EU trade relations

Many ACP countries are small, in terms of population, and as they have a small domestic market, they do not attract a great deal of inward investment. In order to comply with WTO rules, the EU is obliged to end its trading concessions with ACP countries as a block, but may retain concessions with all least-developed and developing countries. The mechanisms preferred by the EU for doing this are regional economic partnership agreements. Although this is a highly contentious issue, the formation of ACP countries into regional ‘common markets’ might encourage inward investment and stimulate regional trade between those countries.

Marketing boards

Although marketing boards were used as a tax-gathering mechanism by some governments and were often over-bureaucratic, they did fulfil some useful functions. Many acted as an arbiter for setting quality standards, some distributed credit in the form of inputs and, more importantly, they were able to bargain with large trading companies from a position of strength and thus gain fair market prices for the country’s output. Some consideration is now being given to the idea of reconstructing a new form of institution that could re-establish some of these useful functions in a way that would benefit ordinary farmers.

Farmers’ associations

Almost all experts now agree that much more effort needs to be made to encourage farmers to form associations and to give them the necessary support to allow them to do so. While it is true that modern farming methods can increase the productivity of a given area of farmland by

improving economies of scale, it would be impossible to clear the land now being worked by small-scale farmers in order to introduce large, modern farms. Economies of scale can also be improved if farmers harmonise their activities to grow a similar variety of crop and harvest it simultaneously. They can then market it collectively and obtain higher prices by selling it in bulk. Such associations can also purchase inputs in bulk more cheaply. In addition, it is far easier to deliver services to farmers, such as extension, training, credit and communication systems, if they form themselves into larger groups.

Market information

European farmers have access to over 2,000 sources of market information, yet agriculture represents only 2% of Europe's economy. Many farmers in ACP countries, where agriculture represents over half the economy, have no access to market information. We now have a strategy that encourages farmers to maximise sales of their goods, without telling them what price they should expect to sell them for. There are some examples of successful MIS in ACP countries, but there are also many examples where no services exist for farmers. This is partly because funding for MIS seems to be a low priority. It is also impossible to evaluate quantitatively the benefits of MIS, because such benefits cannot be disaggregated from the many other factors affecting agriculture, such as weather, prices, availability of credit, and transport conditions. Nevertheless, asking farmers to make their living by selling their goods, then asking them to do this without market information, is like asking them to farm without land or water. An efficient and appropriate MIS for all ACP farmers is essential if their welfare is to be improved.

Commodity exchanges and warehouse receipt systems

Several ACP countries have established commodity exchanges to trade some of their staple commodities. In a typical commodity exchange, buyers and sellers of a particular commodity use the service of brokers to transact sales and purchases. Several brokers work permanently at the exchange, and each may represent many buyers and sellers. By combining buying and selling orders they can then trade these with each other so that their clients who wish to sell can be linked to clients who wish to buy. The transactions between these brokers are carried out in a public arena, and the price of each transaction can be recorded and made public without the identity of the original client being disclosed.

This mechanism not only facilitates the marketing of agricultural goods, but also allows all the actors involved in the traded commodities to discover the latest market price for the commodity. In other words, it acts as a kind of MIS, and has the advantage over some conventional MIS in that the true market price is easier to discover than it would be, for instance, by asking individual traders for their estimate of the price.

However, commodity exchanges are much more costly to set up than conventional MIS, and take up limited donor funding. In addition, commodity exchanges can only be used effectively, in the ACP context, to trade bulk commodities such as grains and pulses.

The warehouse receipt system is usually linked to commodity exchanges. No-one would be willing to buy a product unless they have examined it, or have a guarantee from an impartial body that the quality of the product is as described. If such a guarantee can be supplied, buyers can trade not only in the physical commodity, but also in documents that give title of ownership to a particular quantity of that commodity, which is at a known, safe location and of guaranteed quality. Such documents could also be used as collateral to help the owner borrow money from a bank.

In many ACP countries there is a lack of trust in the viability and probity of banks, and in the mechanisms used to enforce legal contracts. For a warehouse receipt system to be successful, a huge and costly effort needs to be made to ensure the legal and business institutions that guarantee the existence and quality of traded commodities are not in doubt.

Quality standards

Consumers in developed countries now demand very high quality for the goods they buy. They will not buy food products unless there is a guarantee that they are safe to eat. They want good and attractive packaging, and they want goods that are uniform in appearance.

Most small-scale farmers are not equipped to produce such goods and, even if they could, the companies that test the products for safety charge fees that are beyond the farmer's means. This means that only large or extremely well organised farms can benefit from this opportunity by adopting strict quality control measures and obtaining the necessary certification for their goods.

Medium-sized farmers and groups of farmers working together could, perhaps, improve the quality of their products to international standards, but they are likely to lack the marketing skills and trade contacts to identify customers and to negotiate successfully with them.

Such farmers should be encouraged to 'test-market' their goods on outlets such as tourist hotels, conference centres and upmarket supermarkets. Once they are confident they can produce a high-quality product reliably and consistently, they are more likely to gain the confidence to market their products to other countries.

Added value

Over the past 20 years the prices of primary agricultural products have fallen steeply, but retail prices for the same products, processed and packed for the supermarket shelf in industrial countries, has been climbing steadily. These factors suggest that producing countries could gain a lot more income for their goods if they added value to primary products by processing them. Farmers, too, could earn more money for their crops if they could achieve higher quality, sort and grade them properly, weigh and pack them in standard measures and, where appropriate, clean them.

Agricultural extension services and agricultural development agencies place high priority on helping farmers to increase productivity and reduce wastage. This strategy may help individual groups of farmers, but the overall effect may be to add to the problem of overproduction and decreasing prices. In order to meet some of the challenges of the modern agricultural markets, these agencies should now seriously consider helping farmers to add value to their goods.

Strategies for consideration

This workshop is concerned with discussing a number of strategies that could be of assistance to people in ACP country agricultural sectors. These strategies include:

- improving MIS and market intelligence systems
- improving the provision of credit
- expanding the role of auctions, ACEs and warehouse receipt systems
- improving the legal framework for agricultural markets

- improving grades and standards
- improving government policy to improve marketing systems.

Food marketing systems, market institutions and co-ordination roles

Dr Aad van Tilburg (Wageningen University, The Netherlands)

In recent years, food marketing systems (FMS) have attracted a great deal of interest in studies on regional development, supply-chain management and (international) marketing channels. This is, among other reasons, due to renewed interest in food quality, food security, food safety, sustainability of resources and seasonality in food supply. Another reason is that non-processed food items tend to be very vulnerable and, due to their limited shelf life, cannot be stored for a long period. This suggests, especially for fresh products such as vegetables, fruit, meat, fish and dairy products, that actors in the supply channel need to co-ordinate their activities to be able to deliver fresh, tasty and safe products of desired quality to their customer segments.

Food marketing systems play a key role in regional development. The initiatives and risks taken by entrepreneurs, whether farmers, traders, processors or transporters, will affect the pace of regional development. Investment by public authorities in the physical and informational infrastructure will reduce transaction costs. Initiatives taken by private or public authorities to facilitate the improvement of marketing functions, such as standardisation of measures, product grades, standard contracts and MIS, can further reduce the transaction costs (e.g. search and inspection costs of traders).

The aim of this paper is to discuss factors that influence the performance of FMS: the structure, co-ordination and performance of FMS and their institutions. Operations in an FMS are influenced by its (cultural, political, socio-economic and technological) environment, as well as by competition in input and output markets.

Analysis of food marketing systems

Food marketing systems are defined as ‘Sets of interdependent organisations involved in the process of making a food product available for consumption’ (Kotler, 2000). An FMS includes participants, functions and institutions. Examples of participants are producers, traders, processors and transporters. Marketing functions are usually categorised into exchange functions, physical functions, and facilitating functions (Kohls and Uhl, 2001).

Exchange functions include negotiating, buying and selling, and arbitrage. Physical functions include transport (place utility), storage (time utility) and processing (form utility). Facilitating functions include standardisation, financial services (e.g. credit), risk management (insurance, futures), market information and marketing research.

Examples of marketing institutions are auctions, assembly markets, wholesale markets and MIS.

An FMS in a country or region can be considered to consist of three subsystems: a number of spot markets; horizontal networks of assembly or wholesale markets; and vertical marketing channels.

Insights into the structure, co-ordination and performance of FMS can be obtained from theories in economics and marketing. These theories include:

- industrial organisation theory (Marion and Mueller, 1983; Baumol *et al.*, 1988; Scherer and Ross, 1990; Carlton and Perloff, 1994)
- marketing channel theory (Bucklin, 1970; Coughlan *et al.*, 2001)
- institutional economics (Nably and Nugent, 1989; Eggertsson, 1990; North, 1990)
- transaction cost economics (Williamson, 1985; Douma and Schreuder, 2002).

Building blocks for the framework to assess the performance of marketing systems

Building block 1: Industrial organisation theory

A central hypothesis in industrial organisation theory is that ‘sufficient competition in markets solves economic co-ordination problems’. To this end, the actual degree of competition in a particular market is compared with a standard derived from theory.

Examples of such standards are:

- ‘Perfect’ competition, in which competition is optimal because of:
 - homogeneous products
 - many buyers and many sellers
 - market transparency (= complete market information)
 - freedom of entry and exit.

Spot markets that approximate the level of perfect competition are auctions and commodity exchanges.

- ‘Workable’ competition, in which competition has an acceptable level. For example, an oligopoly is preferred above a duopoly.
- ‘Contestable’ competition (condition: free and costless entry and exit of a market), in which the threat of competition by potential newcomers (entrants) is sufficient to keep the prices of the existing (incumbent) traders low. For example, traders operating in an oligopsony (a market in which the number of buyers is small while the number of sellers in theory could be large) are buying in an assembly market. They may collude to fix a (low) buying price, but (expected) market entry of other buyers is supposed to break this collusive action.

Building block 2: Marketing channel theory

Marketing channel theory deals, among other issues, with the degree of cooperation and co-ordination in the channel.

Three basic modes of co-ordination can be observed in marketing channels:

- spot markets through price competition (conventional marketing channels)

- hierarchies through lines of command, contract or joint planning (vertical marketing system)
- networks through mutual trust among buyers and sellers.

Market

Co-ordination of economic activities is governed by the price mechanism (price discovery). Market prices embody a crucial signalling device for market participants. Different levels exist of supplier or buyer control over market prices, dependent on the degree of competition at the supply and demand side in the market. Often the degree of competition for homogeneous products is represented by a matrix with the number of suppliers (one, few, many) as axis 1 and the number of buyers (one, few, many) as axis 2. In this matrix, one can find perfect competition (many, many); oligopoly (few, many); oligopsony (many, few); monopoly (one, many); monopsony (many, one), etc.

Hierarchy

Co-ordination of economic activities can be obtained through an authority or a hierarchy (e.g. a channel leader) by means of contract (e.g. franchising) or planning (e.g. a common marketing plan).

Network

A network consists of informal relationships between agents, and is assumed to lubricate economic relations. cooperation, loyalty and trust among agents are major characteristics of networks.

A summary of these forms of economic co-ordination is represented in Table 1.

Table 1 Key features in co-ordination mechanisms			
	Market	Hierarchy	Network
Normative basis	Contract	Employment	Complementarity
Communication	Prices	Routines	Relational
Flexibility	High	Low	Medium
Commitment	Low	Higher	Higher
Climate	Suspicion	Formal	Mutual benefits
Choices	Independent	Dependent	Interdependent
<i>Source: Powell (1991).</i>			

Main types of co-ordination that can be found in marketing channels are:

- conventional marketing channels: competition through spot markets

- vertical marketing system: co-ordination by channel participants or a channel leader in which co-ordination can be voluntary, contractual or based on ownership
- Mixed forms.

Building block 3: Institutional economics

The main question in institutional economics is: what is the optimal mix of rules and economic organisation to facilitate exchange processes?

Definitions of 'institutions' found in the literature are:

- 'any behavioural regularity'
- 'rules of the game' in a society.

Examples of the first category are trade habits or informal codes of conduct. Examples of the second category are rules or regulations about grading and sorting, standardised contracts and rules about conduct in a market set by market authorities.

Building block 4: Transaction cost economics

Transaction costs can be related to the three classes of marketing function: exchange functions, physical functions and facilitating functions (Kohls and Uhl, 2001).

The broad definition of transaction costs includes all costs related to these three classes of marketing function. The narrow definition of transaction costs usually regards only the exchange functions:

- information collection and interpretation
- negotiation / bargaining
- enforcing contract.

The costs of these facilitating functions are dependent on the availability of proper marketing institutions. These costs are related to the degree of:

- standardisation of measures and product grades
- availability of financial services, e.g. credit
- risk management (insurance, futures market)
- availability of MIS and marketing research services.

The costs of the physical functions (transport, storage and processing) tend to be high, especially in developing countries where the physical infrastructure is underdeveloped.

Framework to evaluate the performance of a food marketing system

What criteria can be used to judge that one FMS is functioning better than another? Performance assessment includes factors such as:

- **effectiveness:** is the system doing what it is supposed to do? For example, are the level and quality of the chain's 'service outputs' satisfactory to its customers?
- **efficiency:** are the resources to produce a product or service used in an optimal way? For example, is it better to 'make' or 'buy' a product or service?
- **equity:** are there 'equal' opportunities for all participants to enter (or exit) a market, or to obtain a fair share of the value added in the chain?

(Coughlan *et al.*, 2001).

The level and quality of the service outputs of a marketing channel may include:

- price in relation to quality
- delivery time or (customer) waiting time
- lot size or package size (discrete, continuous)
- access to, or density of, retail outlets
- degree of product differentiation or product variety.

In developing the framework, we need to know which factors may influence the performance of an FMS. A popular framework is the (supposed) relationship between market structure, market conduct and market performance (Cubbin, 1988; Scherer and Ross, 1990). For example, are market structure variables affecting market conduct and market performance? Or is interdependency between structure and conduct affecting market performance?

The assessment of an FMS is decomposed into the assessment of three subsystems: spot markets; horizontal networks of (assembly or wholesale) markets; and one or more marketing channels.

Spot market level

For example, an assembly market, an auction, a commodity exchange, a wholesale or a retail market.

At this subsystem level, structure, conduct and performance can be defined as follows.

Market structure characteristics:

- degree of concentration of supply and demand
- degree of market transparency (market information)
- entry or exit barriers
- level of transaction costs
- availability of institutional support services.

Market conduct characteristics:

- people's market(-ing) strategies
- degree of competition (e.g. oligopolistic behaviour)
- degree of (tacit) collusion.

Market performance indicators:

- effectivity (process of price discovery)
- efficiency (profitability) – benefits in relation to transaction costs
- equity (market access).

The conclusion of this type of analysis may be that the actual market is close to one of the described models of perfect or imperfect (workable, contestable) competition. What conclusion can be drawn from this analysis? What measures need to be taken to improve market performance?

Spatial 'network' level

For example, at the level of horizontal networks of markets such as assembly markets, auctions, commodity exchanges, distributing wholesale markets.

At this subsystem level, structure, conduct and performance can be defined as follows:

Structural aspects of the network:

- are markets linked through arbitrage activities by traders (or are they autarchies)?
- institutional set-up.

Conduct characteristics of the network:

- does arbitrage by traders between markets reduce price differences and, finally, result in price differences that are equal to transaction or the costs of the three marketing functions?

Performance indicators of the network:

- effectivity – what is the degree of spatial price integration?
- efficiency – benefits in relation to transaction costs
- equity – are there entry barriers?

The conclusion of this type of analysis may be: what is the degree of market or price integration between the selected markets? What measures need to be taken to improve arbitrage between markets?

Marketing channel level

At this subsystem level, structure, conduct and performance can be defined as follows.

Structure:

- what type of governance system? (conventional marketing channels, vertical marketing system?)
- what vertical marketing system?

Conduct of people:

- for example, in the case of a vertical marketing system, who is co-ordinating the marketing channel (channel leader)?

Channel performance indicators:

- effectivity – level of service outputs
- efficiency – compare costs of ‘make’ or ‘buy’ decisions
- equity – what is the added value in relation to the costs?

The conclusion of the analysis is related to the question: Has the best governance structure been chosen for the marketing channel? What measures may improve vertical co-ordination?

Integrating the results of the three subsystems

The results of the performance assessment of each subsystem need to be integrated into an analysis for the total FMS.

Application of the framework

I selected FMS in two case-study countries to demonstrate the application of this framework: Benin and Costa Rica.

The research in Benin was a joint project between three universities in The Netherlands (Amsterdam, Utrecht and Wageningen) and the Faculty of Agriculture of the University of Benin (Cotonou). Many MSc students of these four universities and several faculty members cooperated in collecting primary data on structure, conduct and performance in the maize-marketing system of Benin. This included market prices, marketing costs, levels of competition, collusion practices and entry barriers.

The research in Costa Rica was part of a joint research project in which the Tropical Agricultural Research and Higher Education Center (CATIE), Wageningen University, the Universidad Nacional and the Universidad de Costa Rica cooperated. The study set-up was an integrated approach in which, among others, soil scientists, agronomists and economists cooperated in developing new research tools.

In Benin, all data required were collected by trained enumerators. In Costa Rica, primary data were collected by enumerators and secondary data were obtained from several ministries and the Central Bureau of Statistics.

The depth of analysis in the two studies was related to the availability and quality of the primary and secondary data. Consequently, the statistical methods used to test hypotheses or simulate policy scenarios also varied accordingly.

Study results

The following conclusions were drawn from each of the three country studies.

Benin

The research activities were concentrated in the southern part of Benin, with two rainy seasons and, consequently, two crops and harvests. The physical infrastructure was quite good, and was improved during the research period, resulting in lower transport costs.

Markets

The rural assembly and wholesale–retail markets for maize were characterised as ‘contestable’, which means that other traders could easily enter the market in cases of price differences that were substantially higher than transaction costs. Traders, who were normally dealing in products other than maize, entered the maize market during times when trade profits were increasing, and left the maize market in periods when trade profits were decreasing. This suggests that these traders knew how to deal with entry barriers such as trade customs or practices (e.g. non-standardised volume measures and product grades), lack of market information and working capital.

Spatial networks

The initial assumption was that one or two large-scale wholesale markets in the south (Bohicon and Cotonou) were the price-leading markets, in the sense that wholesalers were able to set prices based on their estimates about the ruling supply and demand conditions. However, this appeared not to be the case when the results of a co-integration analysis became available: Traders in five of six wholesale markets in the south of Benin appeared to interact in such a way that the ruling price level was the result of their joint activities.

Marketing channels

Here the hypothesis was that maize wholesalers were influencing the price level more than maize retailers. This was only partly true. Wholesalers appeared to affect the price level more than retailers in rural markets, whereas retailers influenced the price level more than wholesalers in urban markets.

Recommendations for stakeholders

Relevant price information is difficult to obtain without proper standardisation of measures and product grades (Shepherd *et al.*, 1997). Adequate price information about the quality of the underlying lot of products is necessary to assess its value. One may wonder why these basic requirements in the marketing of agricultural products have not yet been fulfilled in Benin. In the 1950s and 1960s, the Food and Agriculture Organization of the UN (FAO) published documents about this marketing problem (Abbott, 1961). One suggested answer is that these aspects are related to culture and habits, and tend to be hard to change in cases where there is not a clear incentive, as the history of Europe and the USA shows. A strong set of marketing institutions, backed by the government, may be able to enforce the required changes (Abbott, 1961).

Costa Rica

Research activities were mainly concentrated in the Atlantic Zone of Costa Rica.

Markets

Assembly markets were especially relevant for products to be sold in domestic (wholesale or retail) markets. Farmers in the Atlantic Zone complained about the fact that they often could not sell their products because traders did not pass to buy them (for example, in the case of roots and tubers). However, both rural and national cattle auctions were operating in a transparent way.

Spatial networks

There was not much arbitrage between spatially separated wholesale markets at the same level in the channel, e.g. wholesale markets, mainly because of thin markets (caused by a low population density in parts of Costa Rica), large distances and a high mountain ridge (sierra) between markets.

Marketing channels

The marketing of export crops such as bananas (by multinationals), coffee (by a marketing board), fruit (by multinationals) and tubers (by export companies) was well organised as a corporate or contractual vertical marketing system. For non-export crops, the marketing channel had all characteristics of a conventional marketing channel.

Sector analysis

An agricultural sector analysis for Costa Rica demonstrated that the sector has been highly dependent on world prices for export commodities, and on transport costs for non-export commodities.

Recommendations for stakeholders

A spatial equilibrium analysis was used to simulate relevant future market scenarios, e.g. to reduce trade barriers (WTO), to increase price levels for farmers, to shift demand functions upward (because of an expected rise in income), or to shift supply functions downward (because of expected technological improvements in agriculture). For example, the effect of reduced import tariffs or road construction was simulated. The profitability of the country's important export sector depends strongly on world market prices.

Conclusions

The above framework helps us to understand the contributions of people, markets and institutions to better functioning of FMS. This will, in turn, contribute to regional development. Investment to improve the physical, facilitating and exchange infrastructure is essential.

References

- Abbott, J.C. 1961. *Marketing Problems and Improvement Programs*. FAO Marketing Guide No. 1. Food and Agriculture Organization, Rome.
- Baumol, W.J., Panzar, J.C. and Willig, R.D. 1988. *Contestable Markets and the Theory of Industry Structure*. Harcourt Brace Jovanovich, New York.
- Bucklin, L.P. (ed.) 1970. *Vertical Marketing Systems*. Scott, Foresman, Glenview, IL, USA.
- Carlton, D.W. and Perloff J.M. 1994. *Modern Industrial Organization*. Harper Collins, New York.
- Coughlan A.T., Anderson E., Stern L.W. and El-Ansary, A.I. 2001. *Marketing Channels*, 6th ed. Prentice Hall, Upper Saddle River, NJ, USA.

- Cubbin, J.S. 1988. *Market Structure and Performance: The Empirical Research*. Harwood Academic, Chur, Switzerland.
- Douma, S. and Schreuder, H. 2002. *Economic Approaches to Organisations*, 3rd edn. Prentice Hall, Upper Saddle River, NJ, USA.
- Eggertsson, T. 1990. *Economic Behavior and Institutions*. Cambridge University Press, Cambridge, UK.
- Kohls, R.L. and Uhl, J.N. 2001. *Marketing of Agricultural Products*, 9th edn. Prentice Hall, Upper Saddle River, NJ, USA.
- Kotler, P. 2000. *Marketing Management: Analysis, Planning, Implementation and Control*, 10th edn. Prentice Hall, Upper Saddle River, NJ, USA..
- Marion, B.W. and Mueller, W.F. 1983. Industrial organization, economic power, and the food system. In Farris, P.L. (ed.) *Future Frontiers in Agricultural Marketing Research*. Iowa State University Press, Ames, IA, USA.
- Nably, M.K. and Nugent, J.B. 1989. The new institutional economics and its applicability to development. *World Development* 17: 1333–1347.
- North, D.C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge University Press, Cambridge, UK.
- Powell, W.W. 1991. Neither market nor hierarchy: network forms of organization. In Thomson, G., Frances J., Levacic, R. and Mitchell J. (eds) *Markets, Hierarchies and Networks*. Sage, London, p. 269.
- Scherer, F.M. and Ross, D. 1990. *Industrial Market Structure and Economic Performance*, 3rd edn. Houghton Mifflin, Boston, MA, USA.
- Shepherd, A., Lutz C. and van Tilburg A. 1997. Market information services, the theory. *FAO Agricultural Services Bulletin* 125, 2, 5–15.
- Thomson, G., Frances, J., Levacic, R. and Mitchell, J. (eds) 1991. *Markets, Hierarchies and Networks*. Sage, London.
- Williamson, O.E. 1985. *The Economic Institutions of Capitalism*. The Free Press, New York.

References for case studies

Benin

- van Bruggen, L. and van Tilburg, A. 1999. Maize and bean marketing in Benin (West Africa): the choice of marketing outlet of larger peasant farmers. In van der Laan, H.L., van Tilburg, A. and Dijkstra, T. (eds) *Agricultural Marketing in Tropical Africa*. Ashgate, Aldershot, UK, pp. 153–168.
- Fanou, L.K., Clemens, H.M., Lutz, C. and van Tilburg, A. 1997. Les marchés régionaux de produits vivriers. In Daane, J., Breusers, M. and Frederiks, E. (eds) *Dynamique paysanne sur le plateau Adja du Bénin*. Karthala, Paris, pp. 153–188.
- Lutz, C. and van Tilburg, A. 1992. Spatial arbitrage between rural and urban maize markets in Benin. In Cammann, L. (ed.) *Traditional Marketing Systems*. German Foundation for International Development, Feldafing, Germany, pp. 90–100.

- Lutz, C. and van Tilburg, A. 1997. Framework to assess the performance of food commodity marketing systems in developing countries with an application to the maize market in Benin. In Asenso-Okyere, W.K., Benneh, G. and Tims, W. (eds) *Sustainable Food Security in West Africa*. Kluwer, Boston, MA, USA, pp. 264–292.
- Lutz, C., van Tilburg A. and van der Kamp, B.J. 1995. The process of short- and long-term price integration in the Benin maize market. *European Review of Agricultural Economics* 22: 191–212.
- Kuiper, W.E., Lutz, C. and van Tilburg, A. 1999. Testing for the law of one price and identifying price-leading markets: an application to corn markets in Benin. *Journal of Regional Science* 39: 713–738.
- Kuiper, E., Lutz, C. and van Tilburg, A. 2000. Price setting power among wholesalers and retailers: maize in Benin and sorghum in Burkina Faso. In van Tilburg, A., Moll, H.A.J. and Kuyvenhoven, A. (eds) *Agricultural Markets Beyond Liberalization*. Kluwer, Boston, MA, USA, pp. 159–172.
- Kuiper, W.E., Lutz, C. and van Tilburg, A. 2003. Vertical price leadership on local maize markets in Benin. *Journal of Development Economics* 71: 417–433.
- van Tilburg, A. and Lutz, C. 1992. Competition at rural and urban maize markets in South Benin. In Cammann, L. (ed.) *Traditional Marketing Systems*. German Foundation for International Development, Feldafing, Germany, pp. 101–112.

Costa Rica

- Jansen, H.G.P and van Tilburg, A. with Belt, J. and Hoekstra, S. 1996. *Agricultural Marketing in the Atlantic Zone of Costa Rica*. Centro Agronómico Tropical de Investigación y Enseñanza (CATIE), Serie Técnica, Informe Técnico, Costa Rica, p. 120.
- Roebeling, P., Jansen, H., van Tilburg, A. and Schipper, R. 1998. Estimating trade flows in Costa Rica: spatial equilibrium model-based policy analysis based on supply/demand response and transactions costs. *Proceedings of the EAAE seminar: Agricultural Markets Beyond Liberalisation, 23–26 September, Wageningen, The Netherlands*. European Association of Agricultural Economists, p. 319.
- Roebeling, P.C., Jansen, H.G.P., van Tilburg, A. and Schipper, R.A. 1999. Modelando el equilibrio espacial para el análisis de la política agrícola: liberalización del comercio en Costa Rica. In Herrera, D. (ed.) *Instrumentos Metodológicos de Apoyo a la Reconversión Productiva*. Instituto Interamericano para la Cooperación en la Agricultura, Coronado, Costa Rica, pp. 73–90.
- Roebeling, P.C., Jansen, H.G.P., van Tilburg, A. and Schipper, R.A. 2000. Spatial equilibrium modeling for evaluating inter-regional trade flows, land use and agricultural policy. In Bouman, B.A.M. et al., (eds) *Tools for Land Use Analysis on Different Scales; With Case Studies for Costa Rica*. Kluwer, Boston, MA, USA, pp. 65–96.

The growing power of supermarkets

David Queen (freelance consultant, former senior buyer at Sainsbury, UK)

Many contributors to this conference have provided evidence that market power in agricultural products is shifting away from the producers in favour of participants and further towards the consumer end of the market chain. The concentration of international trading companies, through a process of acquisitions and mergers, has enabled the small number of very large, international trading companies that remain in business to purchase goods from atomised and disorganised producers on terms that are increasingly more advantageous to them. A similar process of market concentration has taken place simultaneously in the processing and retailing sectors of the market chain, and companies in these sectors are increasingly able to dictate sales terms to the trading companies that supply them.

In the UK, just four supermarket chains, Tesco, Asda, Sainsbury's and Morrisons, now account for about 70% of all grocery sales. Market concentration in this sector has occurred in most other major consuming countries, and is now also a feature in many developing countries. Many supermarket chains operate in more than one country and in more than one continent. Individual stores may cover an area of 50,000 square feet (1500 m²) and may stock several thousand different grocery lines from hundreds of different suppliers. These four UK chains have reinforced their attraction to consumers of their traditional grocery and fresh food range by also offering non-food items including clothing, kitchenware, cosmetics, petrol, electronic equipment and services such as banking and insurance. In a relatively new strategy, they are now opening smaller local outlets, such as Tesco Express, displacing the traditional, family-owned corner shop. If a new supplier is unable to sell to one of these chains, they have little hope of penetrating the mainstream market.

Many agricultural development agencies now advocate a strategy for developing country producers to add value to the goods they produce in order to capture some of the large profits of companies that occupy sectors nearer to the consuming end of the market chain. Ultimately, this means they should have their products sold through the giant supermarket chains.

Supermarkets, however, need to be assured that all their suppliers can produce safe, high-quality products that are properly and attractively packaged, branded and labelled; that the supplier can deliver the product on time to the supermarket's warehouses; and that they have the means to compensate the store in the event of quality, performance or safety claims.

Supermarket chains are powerful and highly sophisticated organisations designed to maximise profits and minimise risk. The functions of the organisation are divided between various departments and between the head office and the local supermarket branch. And, as the market power of the supermarket grows, the internal decision-making mechanisms are also evolving.

The following section of this paper outlines many of the concepts and procedures used by supermarkets in their relationship with suppliers.

Procedures and concepts

Opportunities for the successful launch of new products and for new suppliers are becoming increasingly limited through UK supermarkets. Although suppliers of all products are affected to some extent, it is perhaps in the grocery sector where the effects are seen most clearly.

Major supermarket chains are now actively engaged in reducing the number of suppliers they deal with. This is a corporately directed process, driven by various departments and individuals in the organisation, including accounts and logistics departments, store managers and area directors. Buyers (individuals employed at the head office of the supermarket to purchase various categories of goods such as fruit, canned goods and confectionery) are becoming less influential in the decisions taken about the choice and number of suppliers.

Buyers are being encouraged to source more and more products from fewer and fewer suppliers – usually suppliers with a minimum turnover of £500,000. This has often been at the expense of some customer choice. Existing, large, reliable suppliers are even being required to supply grocery items that they have no previous experience of producing, in order to avoid supermarkets having to buy from small or less reliable suppliers of the product.

Given the very large range of items offered in supermarkets, and the limited space available to stock them, individual stores are frequently changing shelf space per category of grocery item, and often inappropriately combining the shelf space given to previously separate categories.

Many smaller suppliers are finding it necessary to match their products, and the way they market their products, exclusively to a single supermarket chain. Those who attempt to sell to all the large chains are considered less reliable – perhaps less trustworthy – no matter how good their products are or will become. Supermarket buyers work specifically with designated suppliers with whom they will spend a great deal of time harmonising the supplier's practices with their own requirements. Suppliers are becoming 'tagged', as the expression goes. They can either be a Tesco supplier or an Asda supplier. Only the most powerful brands can operate successfully across all the major retail chains.

Supermarkets attempt to attract a larger share of customers with 'loss leaders'. These are usually limited offers of very inexpensive prices for products such as bananas or sugar. The marketing logic behind this tactic is that customers will go to a store, in which they would not normally do their shopping, in order to buy the very inexpensively priced item, and then develop a habit of visiting that store even after the loss-leader offer has elapsed.

But what is a loss leader? Is it an item that makes a negative gross profit or a negative 'net net' profit (profit after fixed and variable costs have been subtracted)? The supermarket can make anything a loss leader, depending on whether they choose to add in retrospective rebates (see below). Suppliers, generally, are opposed to their products being treated in this way. It often means that the other outlets to which they sell (smaller grocery stores) suffer a fall in sales of the product. Of course, the supplier always has the option of withdrawing sales to the supermarket in protest, but any such retaliatory action would make any future attempt to sell to the supermarket very difficult to achieve.

When supermarkets offer loss leaders, they are reluctant to take that loss themselves. Their market power is such that they can often drive the loss down the supply chain. They can squeeze their suppliers to offer at a lower price. The supplier can then use the excuse of the loss leader to press their ultimate supplier, the farmer, to cut the price.

Supermarkets have two golden rules: maximise profit and minimise risk. The second is almost as important as the first. The risk factor is substantially reduced if all suppliers are large, experienced, familiar with the supermarket's buying arrangements, and based within the same legal system (usually in the same country). These suppliers may buy the products that they sell to the supermarket from other countries, including developing countries, but the supermarket does not want to take this risk.

Supermarkets are very willing to send their employees or agents to foreign countries to observe the production process and test quality control systems, etc., but they are often reluctant to purchase directly from foreign suppliers, even though this would be easy for them to accomplish.

Supermarket buyers, who once had the greatest amount of control over buying policy within the organisation, are becoming more subservient to other departments of the organisation. Buyers are usually responsible for only one category of product – jams and honeys, or biscuits and nuts, for example. Senior management calculated that buyers can only see the success of the business from the narrow interests of their sector. It has become increasingly clear that the accounts department is likely to be better equipped to assess risk, the marketing department can more effectively attract customers, the logistics department is more likely to arrange efficient delivery, and time-and-motion experts are better at working out the costs of restacking supermarket shelves.

The thinking in these organisations has moved away from the central requirement of the individual buyer, which is to source cheap, good-quality products. Although the buyer still has to fulfil this function, the organisation has shown that attention to quality control, product surveys, customer surveys, marketing strategies, stock loss, delivery optimisation and efficient management can make more significant contributions to profitability.

The way suppliers deliver their goods to the supermarket is also changing in a way that benefits the supermarket. Palletised parcels of boxes or cartons of the product must be delivered at a rate dictated by the supermarket to all its UK depots. The supermarket is able to change this rate of delivery with only a week's notice. The supplier is also required to be very flexible over the minimum and maximum quantities delivered. Some stores sell some products at a slow rate and, as they do not wish to finance large stocks, the head office may require suppliers to be capable of delivering in very small quantities.

Suppliers are also expected to provide, free of charge to the supermarket, in-store advertising material such as leaflets, window posters and shelf displays. In addition, they may be asked to provide special offers, recipes for food products and their own customer complaints service. Those suppliers who spend large sums on advertising their goods are, naturally, preferred by supermarkets.

Although suppliers need an accurate estimate of the overall quantity of their product that the supermarket expects to sell, supermarket buyers are reluctant to commit themselves, even if they have their own accurate estimates. Despite this reluctance, they will nevertheless expect suppliers to maintain sufficient levels of stock, at their own expense, to cope with unexpected surges of demand.

Each supermarket chain also expects suppliers to offer their organisation some special feature, unique point of difference or exclusive offer on the goods they supply, which is not offered to rival supermarket chains. Such offers could include competitions where customers can win prizes, superior packaging or free gifts in return for package labels.

All these obligations, written or unwritten, in the supplier–supermarket relationship demonstrate the growing dependence of the supplier on the supermarket.

Some of the benefits expected in this changing relationship are not willingly acknowledged in the trade. The supermarket is always in a position to benefit individual suppliers. This could take the form of stocking the product at a greater number of its stores or helping the supplier to launch a new product. Some compensation for this benefit might be expected. This could take the form of an increased discount for the product or a ‘listing fee’ (where the supplier pays for a new listing) or a ‘marketing allowance’ for an existing product.

The most complicated and obscure incentive offered by suppliers is the ‘retrospective payment’, known in the trade as a ‘retro’. The use and extent of this form of price discounting varies from country to country, but in the UK it often takes the form of a lump-sum payment to the supermarket from the supplier at the end of some agreed period of continuous sales. The lump sum is calculated as a percentage of the value of those sales over the set period, say 1% for the first £100,000 of sales, 1.5% for the second £100,000, and so on.

The most interesting aspect of the retrospective payment is that the supermarket has the discretion to allocate the payment to any part of its activities, not necessarily to the account of the product in question. This allows the store to have considerable flexibility to, for instance, subsidise a new product in which it has high hopes of gaining future sales or to fund loss leaders. The practice also makes it nearly impossible for outside researchers or competitors to estimate the profit made by supermarkets on any individual product.

Calculating the benefit, in terms of profit, for any individual product line can take several forms. In the past, supermarkets mainly calculated the profit on each item using a simple gross margin calculation – the difference between what was paid for the item and what it sold for. More recently the emphasis has been on using a ‘net net’ cost calculation where all external costs, such as shelf-filling, cooling or freezing, wastage, theft, cleaning and unpacking, are included. Even this net net calculation can vary, often depending on whether sales taxes are included or not.

Although most consideration is given to the percentage margin on any product, the cash margin on high-value goods is sometimes considered to be more important.

The question of what is enough gross margin is complex, and can be the subject of much discussion. It is ironic that, while the UK Government is investigating the major grocers for what is seen to be overcharging, other sectors (non-food retailers) think that grocery margins are low. While it is true, from time to time, that the profit margin on certain high-turnover, low-priced products, such as beans and bread, can be very low, the gross margin on most grocery product areas is higher than commonly believed. The gross margin on biscuits, snacks, nuts and crisps seldom falls below 35%. The gross margin on certain raw product areas, such as coffee and tea, can be considerably higher, especially when the high retrospective payments, traditionally paid for these items, are taken into account.

Assessment of the activities of rival supermarket chains is an important aspect of marketing policy. Much intelligence can be gained by simple observation of the rival stores and their advertising output. An important source of scarcer, internal information from the rival camp is the so-called account managers employed by suppliers. The larger suppliers employ a manager (the account manager) with the specific function of dealing with an individual supermarket chain. These account managers are in constant communication with their fellow account managers, whose job is to liaise with the other supermarket chains. It is not in any supplier’s interest, for instance, to have all major supermarkets promoting their product at the same time. It

is therefore part of the account manager's job to see that these promotions happen on a stepped basis. Part of this process will be a discussion of current and promotional retail prices.

Advice to potential suppliers to major supermarket chains

It must be clear by now that supermarkets represent a very powerful market force within the commercial chain of agricultural products. If producers in developing countries wish to capture some of the enormous profits within the chain, they need to add value to their products. Adding value can take the form of simple steps, such as grading, sorting and packing in parcels of standard weights and measures. Fruits and vegetables can be canned or frozen, biscuits can be made from simpler ingredients, and chocolate can be manufactured from cocoa beans.

These more sophisticated steps can only be taken with considerable investment and know-how. The problem is that, even if such investment could be obtained, how can such goods be marketed in the high-priced consumer markets of the world?

Clearly, very few developing countries could establish or acquire a supplying entity with the capital base and experience to satisfy the exacting conditions demanded by the major supermarkets in every major consuming country. It may be possible, however, to make some progress in this endeavour.

There are some large, specialist companies that source products from all over the world. They take on the burden of supplying supermarkets. It may be that they might often want to brand the product in their own name.

The identity of these companies could be ascertained by visiting one of the many trade fairs specialising in the types of product in question. But the first requirement must be for the producer to have a good product, at a competitive price.

Session 3

Marketing needs from government, trade and farmer perspectives

Policy formulation in support of agricultural marketing: Uganda's recent experience

Willie Odwongo and Martin Fowler (Ministry of Agriculture, Uganda)

The liberalisation of most facets of agricultural marketing in Uganda, which began more than a decade ago, involved a range of actions including (i) the abolition or curtailment of the activities of a number of parastatal agricultural marketing boards (coffee and cotton in particular); (ii) the relaxation of foreign exchange controls; (iii) removal of the anti-export bias in the taxation regime; (iv) a reduction in the role of the public sector in the direct provision of marketing services; and (v) the abolition of state-administered producer prices.

These measures gave rise to an economy that was very open, not only by sub-Saharan African standards, but also by developing country standards. By 2003, tariff levels in Uganda were close to those in developed countries, and even lower for agricultural goods (World Bank, 2005).

Among other things, these measures resulted in producers of export commodities receiving a greater proportion of export prices than had previously been the case – in the case of coffee, for example, the proportion rose from an average of approximately 45% in the early 1990s (and 15% in the late 1980s) to more than two-thirds in recent years.

Agricultural marketing – the current situation

Today, agricultural marketing is characterised by limited access to finance among the large number of small traders; by limited quantities of produce being sold by smallholders who make up the bulk of the farming community; and by high transport costs – both internally and to regional and national markets. For example, the cost of transporting coffee to the coast by road has been calculated to be greater than the cost of shipping it from Mombasa to the export market.

However, while farmers continue to complain of low and variable prices⁴, the liberalised marketing system is considered to be relatively robust and efficient, with producer prices in most instances accurately reflecting marketing costs and risks (Oxford Policy Management, 2005). Farmers are well integrated into the market; for example, 76% of crop farmers are selling at least part of their produce, although the proportion is far less in more remote regions and in areas affected by the ongoing civil conflict (Deininger, 2001).

Nevertheless, farmers continue to exhibit risk-averse behaviour, and have both limited access to information on local, regional and international markets and limited awareness/understanding of the markets for their produce. At the same time, the public sector's systems for regulating the quality of agricultural inputs and outputs are characterised by a number of inefficiencies and tend to be operated in an uncoordinated manner.

⁴ Farmers consistently rank marketing as one of the most critical problems they face – second only to pests and diseases, in most cases.

Policy context

The revised Poverty Eradication Action Plan (MoFPED, 2004) is the comprehensive national policy framework guiding development planning in Uganda. It comprises both the identification of priorities and the allocation of resources. It commits government to the overriding priority of tackling poverty, targeting its reduction to a level of 28% by 2013–14, from 38% in 2002–03. Poverty eradication is to be realised through successful implementation of a number of priority programmes, grouped under five ‘pillars’ or components. The second pillar, ‘enhancing production, competitiveness and incomes’, in particular, relates to the development of the agricultural sector.

The Plan for the Modernisation of Agriculture (PMA), which is an integral part of the revised poverty eradication plan, seeks to increase incomes and improve the quality of life of poor subsistence farmers, improve household food security, provide gainful employment and promote the sustainable use and management of natural resources. Seven priority areas are identified in the plan, which require the sustained investment of public-sector resources if both the transformation of the agricultural sector and structural change are to be brought about. These are:

- agricultural research and technology development
- agricultural advisory services
- rural financial services
- agricultural education
- sustainable natural resources use and management
- supportive physical infrastructure
- agro-processing and marketing.

The marketing and agro-processing strategy

A Marketing and Agro-Processing Strategy (MAPS; MTTI, 2005) has recently been published. It seeks to guide public sector investments in support of private sector activities in the latter priority area of the PMA. A lengthy and exhaustive consultation process, involving public sector bodies, development partners, civil society and private sector people, was adopted in drawing up the MAPS. In addition, a large number of analyses of agricultural marketing in the country – commodity-specific, issue-specific and input-specific – were reviewed.

The MAPS identifies the need for policy reforms and public expenditure in four priority areas. The principal public sector interventions proposed under each of the strategic priorities include the following.

Increased collective action by farmers

- Support the formation and growth of farmers’ organisations through the National Agricultural Advisory Services Programme and by further developing the capacity of both the Uganda National Farmers’ Federation and the cooperative movement in group marketing, among other things.

- Develop the capacity of members of farmers' organisations in such areas as collective input and output marketing, quality standards and contract negotiation.
- Increase collective action by traders handling non-traditional agricultural commodities such as vanilla, fish and organic produce.

Improvements in road network, other rural infrastructure and transport services

- Manage the phased construction of district and community access roads.
- Rehabilitate infrastructure at border-crossing points and streamline customs procedures in order to reduce the time goods spend in transit.
- Promote energy generation and use in rural areas, so as to boost the processing of agricultural commodities.
- Upgrade/construct market facilities and storage structures, and promote post-harvest research in appropriate fields on farm produce storage structures.
- Support investment in agro-processing ventures such as cotton spinning, abattoirs and cold-chain networks.
- Create an enabling environment in which telecommunications companies can operate.

A fully functioning, comprehensive policy, legal and regulatory environment

- Draw up and operationalise the National Trade Policy, the Medium-Term Competitiveness Strategy Phase II and MAPS, among others.
- Develop public sector capacity in the analysis of trade issues and regional/international trade negotiations.
- Rationalise the overlaps and institutional confusion that currently exist among public sector bodies responsible for trade analysis and negotiations.
- Improve commercial contract law and its associated legal procedures so as to enable contracts to be more easily enforced in rural areas.
- Draw up/revise and monitor grading standards and quality regulations for key traded commodities – maize and beans, in particular. Following this, assistance will be provided to alert both traders and farmers to the new regulatory framework.
- Consolidate the operations of the agricultural commodity exchange and implement a warehouse receipts system to enhance market efficiency and reduce marketing transaction costs.

Improved access to accurate and timely market information

- Make available to farmers, agro-processors and traders information on agricultural commodities markets, quality requirements, volumes and prices, through a range of media (SMS, newspapers, radio and websites, in particular).
- Provide training to farmers, traders and agro-processors in the analysis and use of market information.

Strategies have been drawn up for the six other priority areas of the PMA, and interventions to operationalise them are being implemented.

Other MAPS-related interventions

A variety of MAPS-related initiatives had been started prior to 2005, as components of interventions supported by both the government and its development partners, who have been strongly supportive of the MAPS. The wide array of interventions includes several pilot marketing information systems, an incipient warehouse receipts system, the establishment of an ACE, and expansion of the electricity grid in rural areas. A number of private sector investments in the fields of agro-processing and marketing have also recently been commissioned – most notably, a textile-manufacturing plant, a vegetable oil-processing works, and a cotton-processing factory.

The planning of yet more interventions is now under way, taking into account lessons learned from implementing these and other pioneering programmes. (Such monitoring work will also inform the refinement of the strategy in the future.) However, the government is being realistic in recognising its limited capacity to undertake such programmes itself. The private sector is therefore expected to undertake the bulk of the new investments, with the government playing a role as facilitator.

Challenges

Various interest groups have expressed frustration at the time it is taking for the impact of a number of the interventions under the MAPS to be felt. For this reason, they continue to lobby policy-makers, planners and decision-makers to develop more ‘interventionist’ programmes, such as establishing food-grain reserves, subsidising producer prices, and providing farmers with subsidised or free agricultural inputs (principally seeds, seedlings, high-quality breeding stock and fertilisers).

At the same time, the delayed operationalisation of some of the pillars of the PMA is jeopardising the full impact of the MAPS being realised. For example, the limited progress made so far in the field of rural financial services is hindering both the expansion of investment in agro-processing, and further development of the network of agricultural input stockists.

Bibliography

Deininger, K. 2001. *Agricultural Production: The Case of Uganda, 1992–2000*. World Bank, Washington, DC, USA (unpublished).

MoFPED. 2004. *Poverty Eradication Action Plan (2004/05–2007/08)*. Ministry of Finance, Planning & Economic Development, Republic of Uganda, Kampala.

MTTI. 2005. *The Marketing and Agro-Processing Strategy*. Ministry of Tourism, Trade and Industry, Uganda.

Oxford Policy Management. 2005. *Uganda’s Plan for the Modernisation of Agriculture: A Joint Evaluation*. Evaluation Department, Ministry of Foreign Affairs, Copenhagen.

World Bank. 2005. *Uganda Diagnostic Trade Integration Study under the Integrated Framework*. Concept Paper. World Bank, Kampala.

Traders' perspectives: the enemy or an essential part of the value chain?

Sophie Walker (Kenagri, Kenya)

Throughout the e-discussion, and in many other development venues, traders are often portrayed as 'unscrupulous middlemen', suggesting that they are the vultures that leave only the bones at the market place for farmers. However, from a trader's perspective, it often appears the other way round – that the poor vultures have only bones to pick over! Whichever perspective is taken, traders are an essential part of the market chain involved with moving goods from producers to consumers.

Traders evolved because farmers shifted from producing small amounts of agricultural produce for their own subsistence to a regular production of surplus. Once farmers were producing more than could be consumed in their local area, there was a need to move the harvest surpluses further away. Farmers did not want, or were unable, to undertake this function at a profit. Traders appeared ready to buy from the farmer and take the risk that they would find a market for the goods further afield.

Are traders symbiotic or parasitic? The tick bird on the impala is pecking off ticks and eating them; but if the tick bird finds a scab and is hungry, he will pick off the scab and drink the blood. Traders will assist in moving surpluses into deficit areas, storing commodities waiting for the markets to absorb them; but when there is an opportunity to take advantage of ignorance – they will.

When I started as a sugar trader in the 1990s, there were 20–30 different sugar-trading companies in London, Paris and New York. They employed young men (and three women) to go out into countries such as Africa and Russia in order to find buyers for them. Our job was to travel to out-of-the-way places, finding the buyers, and building relationships with them. When in London, we would call these buyers on a regular basis (asking after their families, their business, their pets, their interests), hoping that that was the day they would say they wanted to buy. We would send faxes to these buyers with the prices of the commodity delivered to their market on a regular basis. We provided their market information, but with our margins included, and, other than information from other traders, they did not have another source of information giving them core prices.

Out of every 10 trade deals that were made, seven were profitable, three probably made losses. Trade-for-trade, the losses are always larger than the profits.

With the advance of the Internet and mobile phones, suddenly both buyers and sellers could see the prices the sellers and buyers were getting, freight charges were now available and they could see the margin the traders were charging, which included the trader's risk margin. The buyers and sellers were not prepared to allow the trader to make the previous margins, so the profit decreased (however the losses did not). Traders moved into more speculative markets and positions, made increasingly expensive mistakes, and many went bankrupt (my old company) or merged with larger trading groups such as Cargil. Now the number of sugar-trading companies can be counted on one hand.

KenAgri is a branch office of USAgri, a privately owned American company. My boss realised, early on, that he could be one of many traders, or he could customise his business and carve out a niche. With knowledge of the trading market and, in particular, the grain business, he entered into long-term contracts with millers, first in West Africa, basically becoming their procurement departments. We would, on their behalf, negotiate with the sellers of wheat to obtain the best price for the commodity required. Because we were working with a number of mills, we could bulk their commodity up to further assist the millers with lower shipping costs. We expanded our area of coverage, and were employed to ease the South African millers through the liberalisation of the industry in South Africa. For the first year, we did all the purchases for the millers, then later we entered into long-term contracts with a few of the millers. We also work in Mozambique, Kenya, Uganda, Rwanda and Burundi. With the reduction of traders in the market, millers in South Africa and East Africa now feel they are able to buy without our assistance. So we are evolving again. This year, in Kenya I have acted as a broker for the large-scale wheat producers and as a consultant on agricultural trade issues. The wheat producers are perfectly aware of who the millers are, and in the past have negotiated with them themselves. However, they do not know the international market, or how to equate what they produce with a similar, imported wheat, nor are they in the market every day.

There are many layers of traders who move produce from the farm gate to the end consumer/user. Much of the cost is incurred at the bulking level – gathering of the farmer's commodity into an efficient trading volume (e.g. from 100–500 kg to 40 mt truck-load). The longer the chain involved in moving the commodity to the market, the higher the costs involved. In ACP countries, I see two main groups of traders – turnover traders and speculative traders. The majority of traders in ACP are turnover traders, with minimal capital, whose main aim is to buy and sell within the shortest period of time so that, once the trade has happened, they can turn round and go back into the market to buy and sell again. A small number of speculative traders buy up stocks from the turnover traders and sit on them for a number of months, waiting for price increases. While turnover traders may speculate with a very small amount of stock, speculative traders will hold more substantial positions. The speculative traders will have access to more sophisticated information on supply and demand statistics. Turnover traders generally know the prices in the towns they normally visit. They will also have a network of contacts to find out prices in these towns. They can be badly hit when food aid is suddenly distributed in the towns they normally visit and the market is disrupted.

The trader has significant costs. As the majority of farmers in these areas do not bulk their produce together, the trader has to visit every farmer to collect their goods. This means he or she has to arrange transport to every farm, to see if there is anything to buy. At the end of the trip, the cost of going to every farm, whether produce was purchased or not, has to be calculated against the purchased goods. Traders generally buy whatever quality is available on the farm (although they will reject very bad quality). The trader then needs to clean, dry and sort the goods so that they are acceptable to the consumer. The trader has to store the goods while waiting for the markets. Finally, the trader has the cost of tying up his or her capital. In East Africa, if the trader were to borrow money from the bank, it would be rare to have an interest rate of less than 18% pa.

The trader assumes a number of very real risks whenever he or she buys the farmer's produce. Some are incorporated into the price; some hopefully will not happen. There is always the possibility of an adverse market price movement leaving the trader with stock above the market price. Often the trader will have to sell with credit (generally about 2 weeks), which also has to be financed, and then has the risk of non-payment. There may be dishonesty at the farmer level, for example where the top of bags are good produce but there is bad product at the bottom of the

bag. As the trader has no way of testing the produce at the farm, he or she buys on the basis that the goods look reasonable. It is impossible to see infestations such as aflatoxin. Consequently, there is always the possibility that a government organisation could test the trader's goods, find them unfit for human consumption, and then destroy them without compensation. Farmers expect cash at the farm gate, and there is the risk of the cash being stolen while travelling to farmers. Once the truck is full, there is a risk that the produce will be stolen on the way back to the trader's store, or on the way to the next buyer. There is a risk that the goods will be stolen from the store. All these risks and costs have to be figured into the price offered to the farmer, as the price the consumer will pay is often less volatile and less negotiable than the farmer's price.

Different levels of trader use different MIS. All traders have an MIS, although it may not be a formal system that can be accessed by others. Of the MIS formally available in East Africa, in Uganda there is the SMS service, and the Regional Agricultural Trade Intelligence Network (RATIN, www.ratin.net) and the TradeAfrica Commodity Trade Link (www.tradeafrica.biz). In Kenya, we have a bimonthly meeting (for the past 8 years) where traders, government, donors, and banks attend to discuss the balance sheet in the main commodities (maize, beans, wheat and rice). (The only support these meeting receive is that FAO Kenya sends out reminders of the next meeting, and FAO Sudan lends a meeting room.) All sectors are asked for information, and the government balance sheet is discussed. People attend because the information at the meeting is relevant and useful to know. There are no formal minutes sent out to those on the e-mail list, because people might then stop coming; however, this information is then fed out to the larger community through the RATIN and Tradeafrica.biz websites. RATIN also distributes précis information via e-mail to small-scale traders, and written sheets in both English and Swahili. These meetings were also started in Tanzania, Uganda and Rwanda but, for a number of reasons, have since failed.

On any one day, the different MIS will have different prices for the same commodity in the same place. This does not necessarily mean the prices are wrong, but they are indicating different levels in the market, and sometimes even a different time when the price was observed. However, unless the information clearly states at what level it is accessing the market, it can be confusing for those viewing the site. For instance, the SMS service gives the off-truck price in the market. The Ugandan traders say they use it as a price-trend indication; however, they feel it is generally a day or so out of date, so at the same time they will call their contacts in different places to check what is happening on the ground. These traders say that SMS has been a boon for the farmers, as they can now know what the price was in a nearby market very easily and at a minimal cost, which has helped them to negotiate better prices. It has also allowed traders to show farmers the market prices, so that farmers have a basis for understanding the price they are offered and feel less exploited. Traders can use SMS price information to work out where there are anomalies in the prices: a price too high or too low against the expected price in that area. They will then call their contacts and find out what is happening in that market, and whether there is a market opportunity. The largest speculative trader in East Africa, Export Trading, uses people on the ground throughout East Africa, along with personal visits and networking among people to determine what they feel is the supply and demand situation, and where money can be made. Although they occasionally look at the websites, it is more for the production information than the price, which they feel needs verity to check its validity. It takes a number of years of solid performance from an MIS before traders will fully trust it.

Traders will access market information if it is valuable – if it leads to making profitable sales. Therefore a test of an MIS is whether traders are using it. If traders are using an MIS then will also be useful to farmers, as it will reflect real prices or useful information.

It has been discussed that commodity exchanges give an accurate price on a day-to-day basis. However, this is not entirely true. The majority of involvement in a commodity exchange is by investors, speculating against the fundamentals of a commodity. Look at the price on SAFEX today, or in Chicago – it is not the price at the farm gate. There are premiums and discounts to be considered, supply and demand, and location differentials. Therefore, while a commodity exchange gives a transparent base reference for a price, it is still not the final arbiter of the price.

Commodity exchanges have more use than just a pricing mechanism at point of sale. Traders and farmers can use commodity exchanges to hedge prices and guarantee a proportion of their price.

A physical trader (international) would use a commodity exchange as a price-hedging mechanism for a sale or a purchase that had not been purchased or sold. For example, if the trader had sold a fixed-price contract of, for instance, wheat to a miller in Kenya for delivery 2 months hence, but has not yet purchased the wheat, the trader would buy futures on the relevant commodity exchange. The trader would then source the wheat and, on buying this wheat, the trader would sell the futures. If, during this period, the price of wheat had gone up, the miller (buyer of the wheat) would have a contract below the market price, as the trader would have bought the futures at the then market price, so the increase in the futures price would offset the trader's costs in procuring now more expensive wheat. If the market had gone down, the miller would have a contract above the market price, and the trader would have bought futures at a higher price and sold them at a lower price – so would have made a loss on the futures – but that would be recovered through the higher price the miller is paying.

Proportionally very little physical commodity is delivered through an exchange when a delivery month is closed out. The commodity exchange is a price risk-management tool and a speculative adventure.

So a farmer can use the exchange as a method of guaranteeing a price. As the farmer plants a crop, he or she can buy 'put options' – the option to sell at a certain price, paying a premium based on the market's assessment of the likelihood of the put option being exercised. If, when the farmer comes to sell, the exchange price is below the put option less the premium, the farmer can exercise his or her option to sell using the put option, and achieve a higher price than the market price at the time. If the market price is above the put option plus the premium price, the premium becomes a cost and the farmer can sell through the market at a higher price. At harvest time, the farmer can deliver the commodity to one of the warehouses/silos registered to the exchange and receive a warehouse receipt. The farmer can then sell that receipt through the exchange, or can sell the receipt directly to traders or end-users based on the exchange value. A reputable farmer, trusted in the market place, may not need the warehouse receipt and can sell directly to the trader or end-user, using the exchange as a price basis to negotiate the value of the crop at the farm gate.

The use of warehouse receipts is essential for a functioning commodity exchange, as it guarantees the buyer of the receipt that the goods are in a known reputable store and are of known graded quality. Warehouse receipting will work only if the cost of putting the goods in store (known as the carry cost, and made up of storage, collateral management, fumigation and banking) is less than the normal increase in market prices from the point of harvest and surplus to the point of short supply, and therefore the increased price.

A warehouse receipt system can work well without the necessity of a commodity exchange. A warehouse receipt mechanism allows farmers to deposit their goods in storage that is well managed and, in the case of most small-scale farmers, far better than that available on the farm (post-harvest losses at the small-scale farmer level in Kenya are estimated to be between 15 and 25%). The farmer can then obtain bank financing for a proportion of the deposited goods to ease

the cash-flow situation, and wait for the post-harvest price to increase, thereby getting a better income. Once the produce is in a known store with a known quality, large-scale buyers, such as millers or exporters, will be interested in entering into contracts with the farmers.

Regulations that ensure the health of the consumers of produce are essential. All regulations cost money, and that cost will be borne by the farmer and the consumer, never the trader. Simple, reasonably priced regulations ensure good practice; too many regulations and too costly regulations provide a barrier to trade and/or encourage avoidance. Regulations also have to be based on sense. In Kenya, the maximum limit of aflatoxin is set at 20 parts per billion, however the people in Health want it moved to 10 parts per billion. Of the aflatoxin tested in eastern Kenya last year, 20–42% was above 100 parts per billion, and there is no indication that it is any better in other parts of the country.

There is no point in having sales or purchase contracts if they are not enforceable within a reasonable period (30 days). In Kenya, today, to take someone to arbitration over a commodity contract would take approximately 2.5 years, and is costly. Therefore contracts are routinely broken and exploited, and in these instances the complainant has no recourse. For example, a farmer recently delivered all his wheat to a miller on a fixed-price contract with payment at 30 days. After delivering his entire crop to the miller, the miller turned round and reduced the price. The farmer could not get his wheat back and therefore had to accept this arbitrary decision.

More efficient testing laboratories are useful, but the cost of using such tests will be borne by the farmer and the consumer.

Banks will finance supply contracts, but only if they are enforceable in the legal system. Banks will finance goods in warehouse receipt systems once the amount becomes meaningful. Farmers need to come together and bulk their commodities, both to be able to enter into contracts with end-users and to be able to enter into financing operations with banks or micro-financiers.

Finally, at present there is an argument for saying that farmers concentrate only on production, and do not look to see what consumer requirements or consumer trends are. If the farmer concentrates only on production and sells at the farm gate, he or she will always be at the end of a long supply chain, with no control over the costs incurred by other parties. If farmers start to think of themselves as marketers of their products, they will then be interested in producing better quality goods to match market conditions, and will be more likely to give greater consideration to market trends and opportunities.

NASFAM: farmers' organisation perspectives on market information and exchanges

Heishan Peiris (NASCOMEX/NASFAM, Malawi)

Founded in 1997, the National Smallholder Farmers' Association of Malawi (NASFAM) is a farmer-directed business system based on the individual participation of close to 100,000 Malawian smallholders, most farming on less than a hectare of land.

NASFAM is governed by a board of 12 directors, eight of which are democratically elected by NASFAM associations, and four of which are appointed on the basis of technical or commercial ability. NASFAM Commercial and NASFAM Development each run under advisory councils, with membership again drawn from a broad cross-section of stakeholders to provide technical expertise and guidance.

Member associations jointly own NASFAM, a not-for-profit company, which provides them with access to resources, training and technical assistance. NASFAM, in turn, owns two subsidiaries.

- The first subsidiary, NASFAM Commercial, houses the revenue-generating private sector business and marketing services.
- A second subsidiary, NASFAM Development, provides 'soft' services that straddle the public-private divide, including information services, policy advocacy and outreach, HIV/AIDS, gender and other cross-cutting issues.

Training services are implemented under the NASFAM Training and Development Institute.

Products and services

NASFAM provides a variety of services to its smallholder-farmer members throughout Malawi. These include, among others:

- adult literacy training
- policy and advocacy
- training in business operations
- links with private- and public-sector service providers
- technical support for income-generating activities
- auditing and financial services
- information dissemination
- input and output marketing.

The services are both developmental and commercial, and are specifically tailored to the Malawi smallholder. The typical NASFAM smallholder member farms on a plot of less than 1 ha and is located in a rural setting. The type of membership is a level above the poorest of the poor, and members have been selected because they espouse the cause of carrying out farming as a business. A considerable amount of training is done to improve their business acumen, but much more needs to be done in this regard.

Input and output marketing

NASFAM markets crop inputs to its membership through its chain of 53 shops. The items marketed include seed, fertiliser, chemicals, and farming equipment such as hoes. The shops are located in rural areas and are in close proximity to NASFAM's member associations. By locating such shops in close proximity to farming locations, members can concentrate on their prime activity rather than having to make long treks in search of crop inputs.

NASFAM also assists in marketing member outputs. The main crop is Burley tobacco, which is grown by 60% of NASFAM's 100,000 members. Unlike all the other, non-tobacco crops, NASFAM merely assists members in ferrying their tobacco from farm gate to the auction floor, and in any other special projects. The non-tobacco crops which NASFAM helps members to market are:

- groundnuts (mostly exported)
- Malawi bird's eye chillies (totally exported)
- soya
- rice
- cotton.

Other crops for which external markets are sought are:

- pigeonpeas
- cowpeas
- chickpeas
- beans.

Crop marketing

NASFAM has a group of customers to whom it markets its members' produce, both internally and externally. Marketing support is received from an agent in Europe, who finds clientele for bird's eye chillies. NASFAM has created its own grade and standard for this product. Groundnuts, too, are exported to South Africa and Europe. Peanut butter manufacturers are the major users in South Africa, while exports to Europe are to a fair-trade organisation, through which the nuts find their way to retail market shelves.

NASFAM also adds value to its groundnuts and rice. Groundnuts are sold in 1-kg packs in selected Malawi supermarkets and NASFAM shops, while rice is milled and marketed through the same. The products will soon be sold under a new NASFAM brand. NASFAM is actively seeking external markets for its rice.

Members market their products collectively, when grading to the required standards. NASFAM enters into contracts in all its transactions with members and customers. In recent times, forward contracts have been signed with a few customers.

NASFAM is also a founder member of the Agricultural Commodity Exchange in Malawi. We eagerly await its opening, so that we can find another potential outlet for its produce.

Finance

The cost of finance is prohibitive in Malawi. The prime rate of lending is 27% and it is rare that NASFAM can borrow at less than 30% per annum. NASFAM obtains crop finance loans from finance institutions in order to procure crops from its members, and pays the loans back once the crops are sold. Some of the finance is in Malawi Kwacha, while finance for export crops is negotiated and obtained in US dollars.

NASFAM, while being well financed by members in its infrastructure, has not been as fortunate in securing working capital for its crop procurement and marketing operations. Security in the form of collateral is a major issue when borrowing, and NASFAM does not own any major assets that can be provided for such purposes. Nevertheless, NASFAM members' enviable past record in repayment of loans does enable it to borrow funds, although at a cost.

Provision of services to members

As mentioned above, NASFAM seeks smallholder farmer members who wish to carry out farming as a business. These farmers must form themselves into clubs, the members being located adjacent to each other, and are jointly and severally liable for each other's actions. This is a particularly good selling point for finance in Malawi, where often, unfortunately, repayment of loans is not very high on the smallholders' agenda. These clubs (10–15) form group-action centres, a group of which, in turn, form associations. A group of associations forms an association management centre.

The marketing services are not subsidised. NASFAM pays members a market price for their produce, and reimburses the association for any costs it has incurred in buying the crop. The risk of finding markets is taken away from the members, and is NASFAM's duty. The development aspect of members activity is, however, fully funded by donors.

NASFAM faces high competition from other buyers. However, NASFAM's advantage is that it can call on the loyalty of its members to sell the crop to NASFAM. This is not always the case, and members may sell to other buyers who offer a higher price, although their weighing scales' accuracy may be, at the very least, questionable.

Members are always reminded of the need for high and exacting quality standards. This is seen very clearly in our bird's eye chilli sales. In 2005, NASFAM members marketed 17 containers to Europe, and not one had a significant query. Unfortunately, the same cannot be said of groundnuts, which depend heavily on good rainfall for a relatively aflatoxin-free crop. Members are advised on good farming methods by our crop-production department, and considerable attention is paid to producing a quality crop.

NASFAM links up with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) on its groundnut operations, particularly sampling. ICRISAT carries out the enzyme-linked immunosorbent assay (ELISA) test and gives us a good idea regarding aflatoxin levels. While Europe does not accept this test, NASFAM uses these results as a basis for further

sampling by high-performance liquid chromatography (HPLC) in South Africa, prior to exporting groundnuts to Europe.

The NASFAM production department works very closely with service providers, such as seed providers, in procuring good-quality seed for members to grow. In 2005–06, members who grow groundnuts (in selected areas) will be on a pilot drought insurance scheme. Pesticide marketers work very closely with NASFAM members, particularly cotton growers, and provide quality agronomy services and advice.

Production extension

While this service is principally provided by our crop production department, it also utilises the services of crop research authorities whenever necessary. The Chitedze Agricultural Research Station is one such authority.

Irrigation schemes are few in number, and this is one area where NASFAM is constantly in search for partnerships and/or funding. This is an area that requires major investment in a country where its abundant water resource, including the third largest lake in Africa, is not utilised to any significant degree in agriculture.

Conclusions

NASFAM is only fairly recently established in marketing circles. It needs to enhance its reputation for quality production further, and this can be helped considerably through major investment in smallholder irrigation systems. Access to less costly crop finance can also help enhance smallholder and association incomes.

CLUSA and the role of producer groups in engaging in markets

Brook Johnson (CLUSA, Senegal)

Smallholders do not have crop or input volume to take advantage of economies of scale and market opportunities. To overcome this, the Cooperative League of the USA (CLUSA; www.ncba.coop/clusa.cfm) works with farmers to form viable producer organisations. Through producer organisations, farmers increase their access to market information and increased competitiveness.

Rural economies are heavily dependent on the agricultural sector. The key to reducing rural poverty is to increase the income available to small-scale farm families, using methods that allow the farmers and communities themselves to direct and control the process. In developing countries, land and labour are the primary assets of small-scale farmers. To increase income for farm families, farmers must improve the economic return they receive on the investment of their assets; this requires lowering the transaction costs of production and marketing, and increasing the price they receive for their production.

But small-scale farmers face several barriers that prevent them from getting a good return on their assets:

- inability to aggregate sufficient volume to capture a significant market share
- lack of access to reasonably priced inputs delivered on time
- lack of access to financing
- lack of access to sustainable agriculture technology
- inadequate market information.

Overcoming these barriers requires group action: small-scale farmers cannot solve these problems individually. Rural producers must be able to rely on private-sector, member-owned and controlled businesses to reduce transaction costs and build a volume of business to purchase and maintain a foothold in the market place, operate on economies of scale, and gain access to services that are too costly for individual producers to provide for themselves.

For more than 50 years, CLUSA⁵ has worked in developing countries to economically empower individuals and communities through development of effective, sustainable group businesses and democratic practices. Cooperative development, both in the USA and abroad, is a critical component of CLUSA's mission. Since 1953, CLUSA has managed over 200 long-term projects in 53 countries and has performed over 1,000 short-term consultancies in 79 countries.

⁵ Known as the National Cooperative Business Association in the USA.

Partners

Funding partners

CLUSA receives funding for its programmes from the US Agency for International Development, the International Fund for Agricultural Development, the World Bank, the Inter-American Development Bank, cooperatives and local banks.

Implementing partners

CLUSA's implementing partners include indigenous cooperative development organisations, host governments, local and international NGOs and agribusiness. Other partners include import/export cooperatives, technical services organisations, and small and micro-enterprise foundations, which have institutionalised programme services in El Salvador, Egypt and Indonesia, where a non-bank finance company was established by cooperatives to facilitate trade. Some of these organisations are 10 years old and fully self-sustainable.

The CLUSA approach

The CLUSA approach is founded on the belief that our clients should be the decision-makers, and that our role is in providing clients with training in analytical, problem-solving and entrepreneurial skills. We do not provide instructions on the 'whats', 'whens' or 'hows' of local development. Local communities can and must do the job of development for themselves. This participatory approach has been effective in imparting the skills necessary for communities to organise to solve development problems and gain the confidence to negotiate agreements on their own with suppliers, buyers, banks, donors, government agencies and others.

Using this approach, CLUSA has been successful in empowering organisations – cooperatives, group enterprises, community health committees, community-based natural resource management organisations and others – to manage their own development in a participatory and sustainable manner. This is illustrated by the following principles.

The ideal implementing agency is non-governmental – in addition to being free of civil service constraints/attitudes, the implementing organisation must have a strong business orientation, be capable of analysing, then evolving, based on lessons learned that have been elicited from programme experience, and be strongly values-based (participatory/consultative management style, respect for farmers, multi-directional feedback, etc).

- Decentralisation – field staff are stationed within the communities where they work; all training/consultation/support occurs on site in the villages.
- Participation results from member ownership and economic benefits – success breeds success.
- Participatory decision-making, leader accountability and transparency are essential.
- Experiential training methodology – the training is participatory, all book-keeping forms and records are developed, together with the users in local languages, rather than requiring that they adopt standardised formats.

- Step-by-step – the development of producer organisations is organised in a series of distinct meetings/training sessions; staff training follows the same steps.

Overview of activities and clients

CLUSA's projects include training, management and technical advice to the following clients:

- rural farmers' associations, village organisations and cooperatives, producing and marketing fruits, vegetables and cereal grains, purchasing agricultural inputs, and undertaking other types of income-generating activities, e.g. cooperative consumer stores, pharmacies, and reforestation projects and firewood sales
- cooperatives that export traditional and non-traditional products to the USA, Europe and Japan to raise incomes and diversify employment opportunities for members
- rural and urban community development organisations providing small-scale credit and training to entrepreneurs and micro-businesses
- community-managed service providers, including village-level health programmes, community-managed natural resources and civil society organisations/NGOs.

The impact of CLUSA's international programmes in an average year is described in Table 1.

Table 1: Impact of CLUSA's international programmes in an average year			
3,500	500,000	3,500,000	US\$100,000,000
Number of cooperatives, member-owned businesses, or farmer associations served by CLUSA	Number of members of CLUSA-assisted co-ops and associations	Number of people benefiting from CLUSA's programmes, including co-op members' families and community labour opportunities created	Approximate dollar volume of business conducted by CLUSA-assisted co-ops and associations

Services and provision

CLUSA's core competencies can be summarised through the following general activities:

- developing in members of farmers' organisations/cooperatives a sense of ownership, control and responsibility for their cooperative business, by having them assume decision-making authority, which is then discharged in a democratic, participatory manner
- identifying viable business opportunities related to agriculture production, processing and marketing, and facilitating market links
- facilitating the development of value-based organisations (NGO, consulting firm, etc.), which will subsequently be transferred to local management/ownership for institutionalisation purposes.

Organisational phase

Contact meeting and follow-up meetings – open meetings are held, during which the programme benefits and conditions for membership are explained. The follow-up meetings are held to ensure understanding, and to generate further discussion of the crucial importance of member selection. Additionally, member criteria and selection processes are developed.

First group meeting – based on members' prior experience, duties are enumerated for each office member as deemed necessary, qualifications are developed, and a fair, democratic selection process is established.⁶

Animator training – two to four members selected by the producer organisation to serve as understudies and eventual replacements for the facilitators are given a 3-day training course in basic communication and facilitation skills; animators gradually take more responsibility in trainings/meetings as their capacity increases.

Vision-setting – the producer organisation elaborates its vision, including what business activities, assets, membership and structure it will have 5 years in the future.

Executive training – officer bearers are trained in the fundamentals of their duties and in two basic techniques: action planning and problem-solving.

By-laws – through a series of questions, the group is led to develop its own by-laws to address elements such as purpose, entry/exit of members, share capital, terms of office and means of replacement, and general rules of governance; once the by-laws are adopted, the group is formalised.

Self-analysis – approximately 6–8 weeks after formation, the group undertakes a systematic self-examination of its officers, animators and membership, to identify strengths/weaknesses and take appropriate measures to correct any problems identified.

Depot formation phase

Consequently, six to eight groups within a 10–20-km radius are asked to select one or two representatives to serve on the depot committee for its zone.

Training is provided covering all duties of the depot committee.

The depot committee develops screening criteria and a screening process; new groups apply for membership on the depot committee and are screened.

Outgrower–input distribution phase

Preparation – the depot committee organises the forthcoming input-distribution exercise.

Budget and action plan – the depot committee prepares an operational budget and action plan.

⁶ In CLUSA's experience, the fundamental unit must be a self-governed, self-selected group of no more than 40, and preferably about 25. Only in a producer organisation small enough to allow real participation in decision-making, and transparent communications, can larger, hierarchical structures be created without losing the essential sense of ownership and/or risking that benefits will be captured by an elite minority.

Training of depot managers – once selected, training is provided in the specifics of how to manage their duties, including developing and learning how to fill out requisite records.

Extension system – each producer organisation selects two members to act as contact farmers and prepares a contract, including the compensation package; from among these, a lead contact farmer is selected for the depot. Using a pyramid system of LCF–CF then CF–members, training is conducted; covering farmers have also been the catalyst for a sub-group’s undertaking its own research.

Farmers submit credit requests.

Self-assessment and audit – each depot committee must prepare and submit a written self-assessment that examines every facet of the operation, from screening through to actual physical distribution.

Outgrower–marketing phase

With the approach of harvest time, formal interventions begin to assist the depot committee to prepare for their role in marketing the crops. This process parallels that of the input-distribution phase: preparation, action plan, training of depot manager, extension and evaluation. Again, the principle is to delegate as much as possible to the depot manager.

Overview of services

As has been noted, training is typically training-of-trainers, aimed at building the capacities of local animators/contact farmers, using experiential learning methodologies.

Given this general approach, the basic services that CLUSA facilitates are:

- self-management – transferring literacy/numeracy, business, operational, organisational, financial, and managerial skills to cooperative leaders, employees and general members
- economic strengthening – developing a series of profitable business activities that address members’ economic needs
- financing – securing a direct relationship between the cooperatives and reliable local sources of credit for financing their business activities
- networking – accessing the technology and information needed to establish and operate competitive businesses.⁷

Sustainability

As is the case with any time-limited project, there is the challenge of how to sustain any gains realised during the life of the programmes. The crucial sustainability question is at the level where the services provided by the project can be institutionalised – which, in turn, is a question of capacity-building. Several options exist:

- independent depots – in this scenario, each depot would act independently to secure its credit, obtain/transport its inputs and secure/deliver to its markets; although having the

⁷ In countries where programmes have failed to identify a reliable intermediary with sufficient capacity (financial and managerial), CLUSA has initially assumed this role: identifying/securing markets and procuring/distributing inputs.

advantage of simplicity and lower costs, it faces the loss of benefits from volume purchases/sales.

- association of depots – at whatever level effective concerted action were possible (zone, district, province or region), some benefits would be gained from the volume thus generated; co-ordination would become the major challenge
- a company or NGO working on behalf of, and (ideally) under the governance of, the depots or associations would ensure the benefits of volume, and at the same time ease the logistics of ‘doing business’.

Marketing services

Through scaling up, farmers have increased access to information through more effective levels of organisation, and with improved networking and business skills, are able to actively seek out markets themselves.

Due to their improved levels of efficiency, producer groups are typically in direct contact with buyers, and through this increased communication farmers can maximise their market information. This is the most effective market information for producer groups.

Depot centres provide an improved target platform for receiving market information. Producer organisations in Uganda are currently using a mobile phone-based MIS with producer organisations possessing a phone.

Some depot committees set up small marketing committees, which are able to find out about quality requirements and prices that are prevalent in the market at that particular time. Attention must be paid to ensuring these depot committees have the appropriate skills to carry out these kinds of marketing activities.

Case study

Although the principles outlined above guide CLUSA’s activities, its interventions differ according to the nature of the activity, of the relationship to the funding source, and of the market chain. To illustrate the process, activities in Senegal are presented below.

Karaya gum is a gum exuded by the tree species *Sterculia setigera*. It is produced by only two countries in the world: India and Senegal. Karaya gum is used as a laxative, a food fixative and denture glue. Although Senegalese gum is considered to be a higher-quality product physically than its Indian counterpart, Indian gum dominates the world market, which produces a more hygienic product.

Karaya gum has not only an international but also a national market, and approximately 30% of total production of Karaya gum is consumed in Senegal as a food condiment. The subsector has an estimated national turnover of approximately US\$6 million per year, accounting for approximately 40% of the revenues of all forest products in the Tambacounda region, and providing an average income of about US\$450 year per producer, in a country where the minimum rural cost of living has been estimated as US\$350 per year.

The Karaya gum subsector was traditionally a long and inefficient sector with many participants. Given the length of the market chain, producers, the primary resource managers, received relatively little of the profit. Perhaps because of the limited nature of the revenues, producers were typically Guinean migrants. These producers were not local community members and had

little vested interest in the sustainable management of local resources, which resulted in the destruction of certain trees and reduced regeneration. These outside producers sold to collectors; collectors were often local store-owners and, because they had advanced farmers food, they could frequently purchase gum at very low prices, as producers wanted to erase their debts. Collectors sold to itinerant traders (*bana-bana*), who in turn sold the gum to the larger export firms. However, as the product was not readily perishable, itinerant traders would frequently stockpile the product and wait for higher prices. This forced the price up for exported gum and, on occasion, forced exporters to accept losses in order to respect their contractual obligations to external buyers. In addition to inflated pricing, Senegalese gum was considered to have a high bacterial infection rate compared with Indian gum. Both pricing and quality were limiting Senegalese gum competitiveness on the world market.

Setexpharm, the primary gum-export business in Senegal, had long been looking to buy gum directly from producers, but had not had the resources to invest in subsector organisation. Wula Nafaa, which was looking to boost producer incomes and improve incentive for local producers to invest in long-term natural resource management, helped organise producer groups arranged around a collection point.

Wula Nafaa is an agricultural/natural resources management project funded by USAID, partnered with the ministry of environment, primed by the international resource group. *Wula Nafaa*, which means ‘benefits of the bush’ in a local dialect, is based in south-eastern Senegal, and is mandated with implementing a natural resource management programme based on the ‘nature, wealth, power’ paradigm. Natural resource management rests on the interaction of resource characteristics, policies, institutions, skills and economic signals. Experience demonstrates that programmes that integrate nature (environmental management), wealth (economic concerns) and power (good governance) have promising results. CLUSA is an international resource group subcontractor responsible for the economic benefits portion of the programme.

Wula Nafaa, following a modification of the steps elaborated above, has facilitated the organisation of 191 producer groups with 28 depot centres in both targeted and expansion zones. In addition, Wula Nafaa initially facilitated a 2-day participatory subsector workshop, in which actors elaborated an action plan that has helped guide project activities. Most importantly, Wula Nafaa facilitated the elaboration of a contract between producer groups and Setexpharm, in which producers received a price approximately 40% higher than what they had previously earned, in exchange for improved quality product and easier pick-up.

In the year since the first contracts were signed, 141 tonnes of gum were collected from producer groups, leading to an increase in revenue of US\$113,000 from 178 karaya gum enterprises (including some 50 producer organisations). Moussa Ba, president of a karaya producers’ group, stated that some producers ‘that had never held a sum of \$100 in their hand before the signature of contracts with Setexpharm, were now able to buy ploughs and seeding machines thanks to the sale of karaya gum this year.’ In addition to increasing producer revenues, Setexpharm has started to invest in the role of business development service provider, training producers in sustainable harvesting techniques and quality control. As a result of this increased economic interest, local communities are starting to look to manage their *sterculia* trees themselves, in a way that is conducive to long-term use: including reducing bush fires, increased regeneration and improved tapping techniques.

Thus, while producer groups have collaborated with the lead firm, Setexpharm, resulting in increased competitiveness of Senegalese karaya gum on the world market and better prices for

local producers, local forest-management groups are working with producers' groups to ensure the sustainability of *sterculia* harvesting and regeneration.

While it is evident that some progress has been made in improving subsector efficiency: (producers' groups have been organised and their capacities in business skills, group dynamics, quality control and harvesting techniques reinforced; relationships between producers' groups and buyer have been established), it is felt there is now a very real need for improved market information on the part of both buyer and producer. In particular, there is a need for improved communication with regard to quantities of gum available at producer level, and the availability of funds on the part of the buyer (which, in turn, can be better co-ordinated by information of available production), and also information on pricing. In order to facilitate this, Wula Nafaa is looking into possibilities of collaborating with Manobi, also present at this conference, on developing solutions to improve communication. It seems doubtful that market information could have improved without an associated organisation, and capacity-building of producers.

Barriers to service provision

It is important to recognise the barriers to producer organisation development. The following are several critical factors noted by CLUSA.

- Lack of transparency and undemocratic structures: producer organisations are susceptible to being hijacked by political interests, rather than economic interests. This was often the case in many countries where cooperatives were run by the State. This can also happen where little attention is paid to the correct facilitation process by development programmes, and the approach is not 'bottom-up'.
- High levels of illiteracy and innumeracy provide barriers to the development of management and business skills. Any attempt to tackle literacy is long-term and potentially costly. Attempts to implement literacy as a secondary or tertiary activity are often very difficult to accomplish, especially given the average life span of projects. There needs to be a focus on targeted functional literacy, where possible.
- While the time to organise producer groups is typically achievable within the life span of average products, organisation and the implementation of MIS takes a little longer, and is often complicated by the fact that organisation specialists are not always market information specialists. Without the assistance of development organisation, farmers' organisations have difficulties connecting to markets.
- There is a tendency for many programmes to provide handouts (inputs, seeds, free credit, etc.) to small-scale farmers. This has been demonstrated to have a negative impact on their long-term economic development and foster a continued mentality of dependency. It also makes it difficult for other organisations, such as CLUSA, that possess a real 'facilitator' approach to succeed, because of expectations and precedents.
- There are high levels of informality in a subsector that renders organisation and communication difficult. Development of producer organisations is easier and faster in areas that are reasonably well connected to markets, and for export-oriented or high-value crops, than in marginal areas focusing on subsistence crops.
- There is waning enthusiasm on the part of certain segments of the development community to invest in producer organisations.

Lessons learned

The following are several lessons gleaned from previous CLUSA experiences in the development of producer organisations and their interactions with the market.

- There should be a concentration on the marketing of crops that producers are already growing, or have grown, and for which demand exists.
- There should be a concentration on identifying reliable buyers and establishing links between buyers and producers, resulting in clear economic gains. Developing long-term win-win business partnerships between farmers and input suppliers, buyers and financing institutions is central to success.
- To facilitate links between producers and buyers, the development of producer organisations is critical.
- Producer organisations and second-tier cooperatives must be able provide concrete business services to members.
- Producer organisations require sufficient levels of capital to buy in quantity or invest in processing technologies; access to credit is critical.
- Upper-tier cooperatives should be managed by professional managers, with solid business plans and audits.
- In most cases, second- and third-level entities are best placed to carry out marketing activities and interact with private sector businesses, due to their enhanced management skills.
- Improved communication is needed between producers and buyers to ensure trust (social capital is critical at the producer level), also correct market information.
- Vertical integration is facilitated if there is a reasonably balanced power relationship between processors and producer members.

Bibliography

Philips, R. and Serrano, A. 1999. *Developing Self-Managed Outgrower Capacity in Zambia and Mozambique*. CLUSA, Washington, DC, USA.

Santacoloma, P. and Rottger, A. 2003. *Strengthening Farm–Agribusiness Linkages*. FAO, Rome.

Whyte, C. 2000. *Sustainable African Agricultural Producer Organizations. Development Workshop Synthesis of Proceedings, Strategy Recommendations, Lessons Learned and Best Practices*. USAID, Washington, DC, USA.

Session 4

Innovations in market information services

Market information and innovations

Shaun Ferris (CIAT, Uganda), Patrick Engoru, Mark Wood and Elly Kaganzi (IITA, Uganda)

The provision of basic market information is a service that aims to increase the efficiency of agricultural markets and contribute towards overcoming basic issues of market failure based on asymmetrical access to information. In its simplest form, it is argued that access to spot prices assists farmers to make decisions on where to sell their goods and to negotiate for better prices from a position of strength; traders also use this information to assist in facilitating arbitrage and the distribution of goods.

Longer-term trend data allow farmers and service providers to make decisions on which crops to grow and when to harvest, based on seasonal price trends. Historical data also enable farmers and traders to make more informed decisions on storage options, and finance institutions can use this information to assess risks of lending for speculative storage and trading options. Policy-makers and researchers use market information to review shifting market patterns and to assist in planning to foster market growth, making provision for marketing institutions and infrastructure, monitoring food security conditions, and for more accurate and timely provision of food relief. Due to the range of potential users and uses of market information, there is, in much of Africa, increasing demand for accessing such data if reliable, accurate and timely.

Despite these benefits, debate on the need for long-term support to a market information system (MIS) continues. Issues of quality and financial sustainability are paramount, and these are important because the provision of market information achieves best results when it is implemented as a long-term process. Any commitment to support such a service therefore has implications for locking in limited public finances over a considerable number of years. Consequently, many agencies and government departments are reluctant to undertake this responsibility.

Additional reasons for not supporting MIS include poor performance in many MIS projects, lack of income streams, and the problems associated with investors not being sure about the cost benefit of MIS. More recently, development thinking has also come to the view that services such as MIS should be undertaken by the private sector, and rather than supporting long-term public good services, projects should be designed to facilitate the transition of such services from being a public good to a private good. Current thinking is more focused on 'how' projects can be designed to make this transition: what level of capacity and competence is required of the existing MIS service, and whether there are certain local economic and political conditions that should be in place to achieve this transition successfully. In an attempt to answer some of these issues, a review of MIS in Uganda was undertaken to assess the usefulness, financial viability and cost benefit of MIS.

Survey results found that information related to the marketing of agricultural produce was being provided by many agencies, including development projects, private sector, NGOs, research centres, relief agencies, parastatal organisations, government departments, banks and other financial agencies. The types of information spanned a range of issues related to contract provision, productivity enhancement, market co-ordination, business planning, market links,

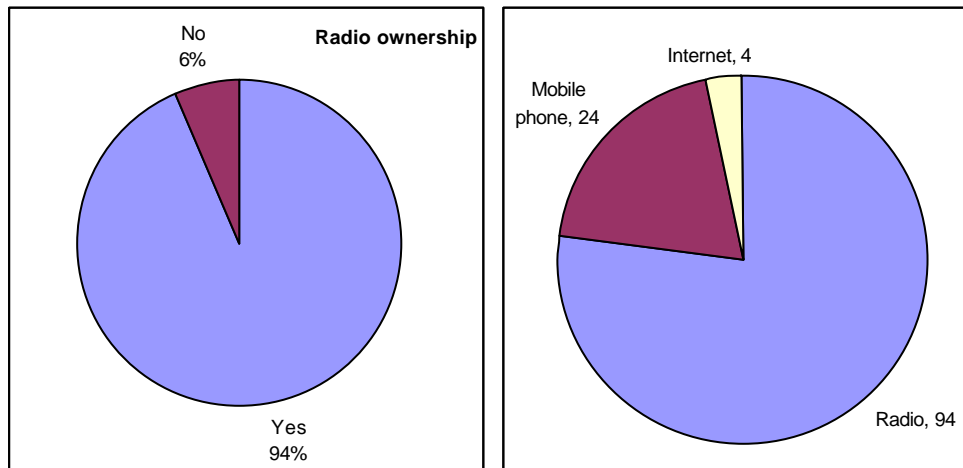
market information, credit allocations based on market options and market intelligence. However, only two or three agencies were providing ‘market information’, as defined by Shepherd *et al.* (1997) – a regular public dissemination of prevailing market prices, commodity volumes and market conditions and also available price trend data and analysis for specific commodities.

As part of this study, a quantitative and qualitative survey was undertaken to provide a measure of the accessibility, usefulness and utility of the current MIS, and to assess how this type of service may be financed and improved in the future.

The results showed that the overall evaluation of the MIS by farmers and rural traders was highly positive. In terms of access, survey results found that 94% of farmers own radios and approximately 70% of farmers gain MIS through radio programmes. Nearly 25% of farmers also own mobile phones and, surprisingly, up to 76% of farmers have access to mobile phones (Figure 1). The survey found that virtually all traders have mobile phones, a technology that has significantly improved business efficiency in Uganda.

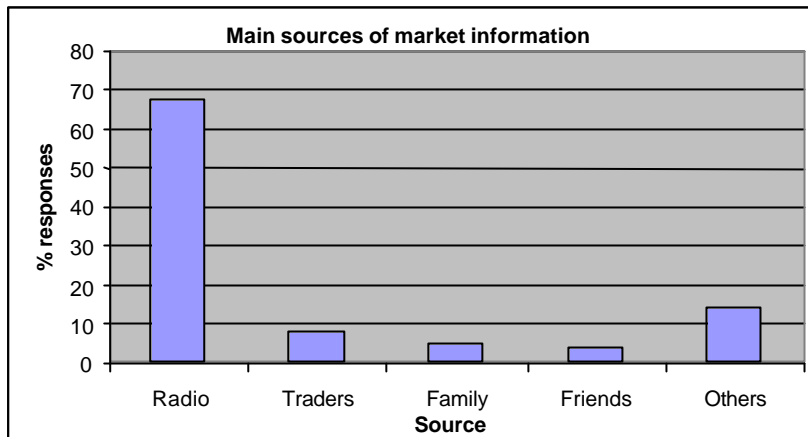
In the electronic survey, made up of traders, NGOs and analysts, it was found that 52% gain MIS data through e-mail and Internet, and many are using the SMS service. Up to 96% of those who receive regular market information through e-mail and Internet relay this information to their immediate clients.

Figure 1: Farmers’ group and asset ownership levels



These findings suggest that FM radio is still the most appropriate means of providing market information to the poorest group – the farmers and rural traders; e-mail for those with connectivity; and that SMS is slowly gaining popularity (Figure 2).

Figure 2: Farmers' main sources of market information



The priority 5 crops cited by farmers linked to their market activities and decisions are indicated in Figure 3. These crops are the most commercial agricultural products.

Figure 3: Farmers' main sources of market information

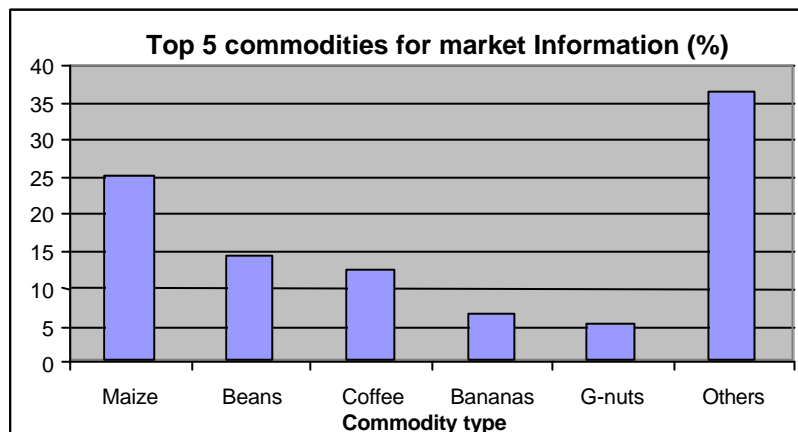
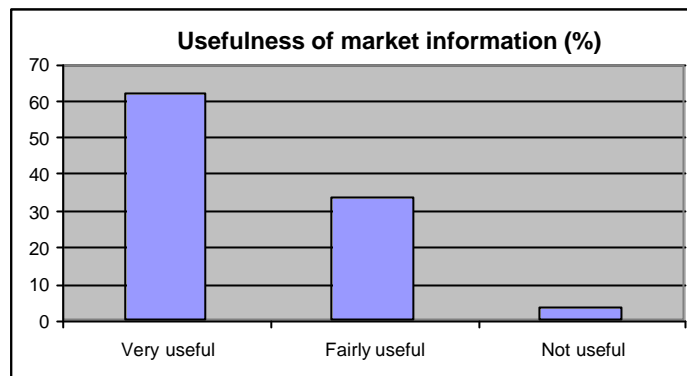


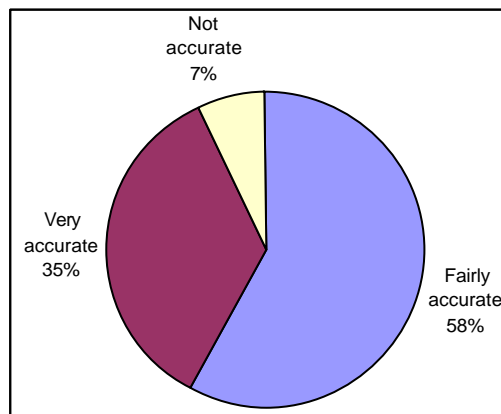
Figure 4 shows that 60% of farmers found the MIS very useful, and 33% found it to be fairly useful. This overall figure of 93% of farmers finding the service useful is a very strong endorsement of the service in terms of getting information to the client group and their being able to understand and use this information. Some critics of MIS suggest that farmers are unable to use basic price and market condition information, but that is not borne out by this evidence.

Figure 4: Farmers' perceptions of usefulness of MIS



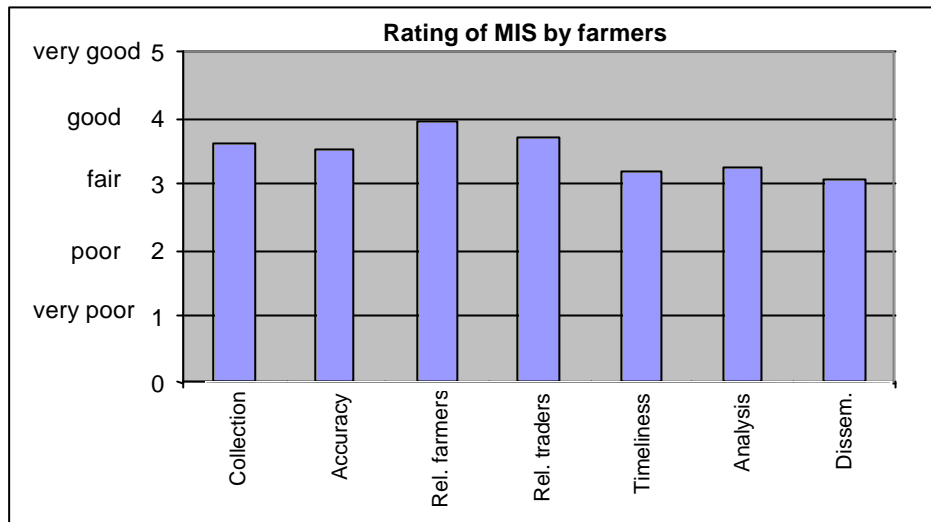
In terms of information accuracy, the findings show that 35% of farmers found the information to be very accurate and 58% found it to be fairly accurate. Again, this supports the view that those farmers who receive the information have considerable confidence in its accuracy (see Figure 5).

Figure 5: Farmers' perceptions of accuracy of MIS information



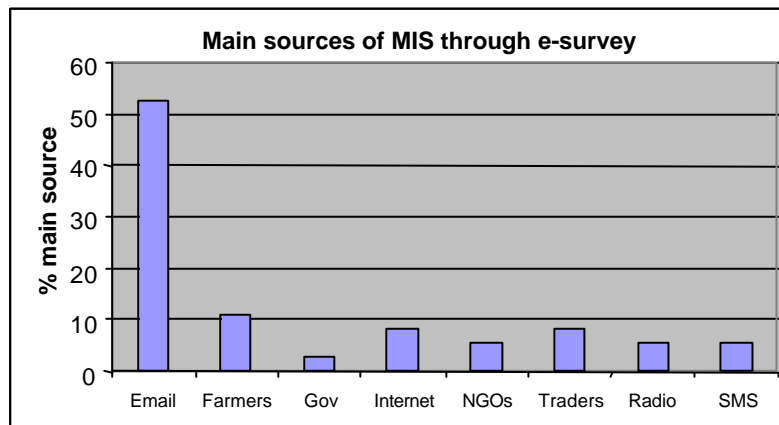
The overall assessment of the MIS was rated according to a five-point scale (Figure 6). This analysis found that, in all areas, the MIS rated between fair and good. Overall, the farming community is reasonably satisfied with the performance of the service, and in no area was the service clearly underperforming.

Figure 6: Overall farmers' rating of the national MIS service



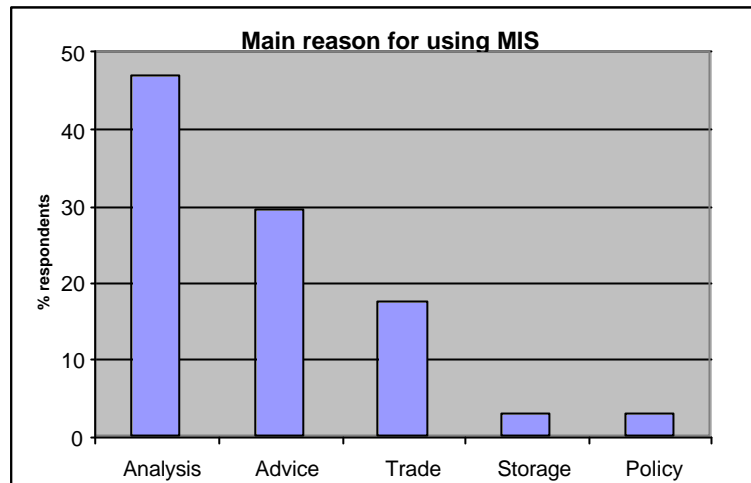
In a second type of survey that was conducted through an e-mail questionnaire, a different group of people were studied. This group was made up of all the people who receive the MIS on a daily basis, and comprised NGOs, larger traders, development projects, relief agencies, government and media houses, including print and radio. This group relies mainly on the e-mail service/Internet to receive its market information (Figure 7).

Figure 7: Main sources of market information from the e-survey



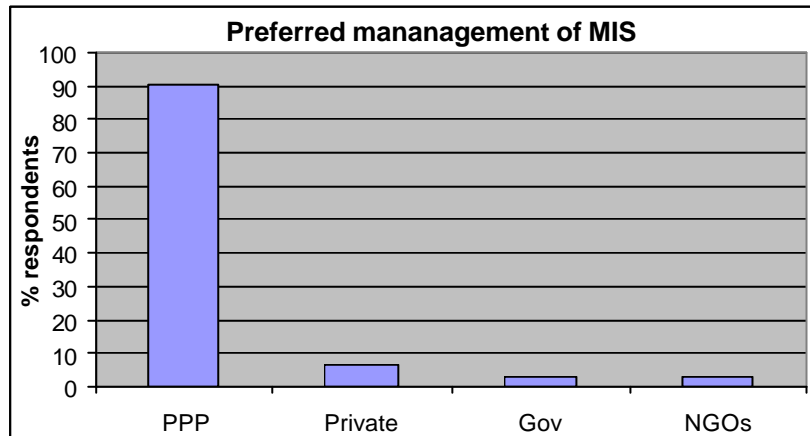
The main uses of the information were for analysis, advice and trade (Figure 8). On further analysis it was found that, essentially, all these areas are related to trading, in which case 98% of the responses were related to trading purposes.

Figure 8: Main reason for using MIS based on national MIS service



When asked about who this group felt should operate the MIS in the future, 90% of responses indicated that it should be operated through a private–public arrangement. Many responses indicated that a government department should not take the lead in this area, due to perceived poor past performance (Figure 9).

Figure 9: Overall farmers' rating of the national MIS service

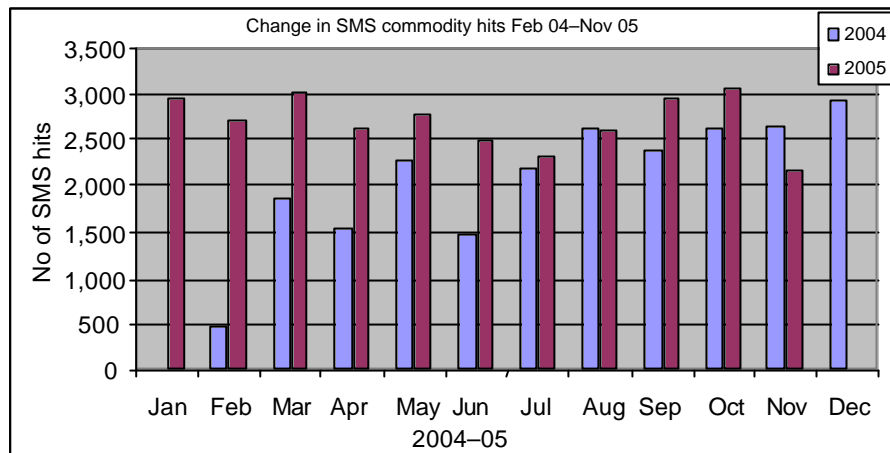


The priorities for crops from this group were more detailed, but confirmed the same priority crops identified by farmers.

The final survey was conducted on the use of SMS price data in Uganda. Due to the rapid expansion of the mobile phone services in Uganda, a pilot SMS price service was set up in 2001 that is available on the MTN network, through the SMS media service provider. The price service data are currently being shared across all three mobile phone networks in Uganda including Mango and CellTel. The number of hits in this service has steadily grown as mobile phone usage has increased, and people have become aware of that market prices can be viewed on the SMS platform. Mobile phone coverage in Uganda is relatively good, and there are approximately 1 million subscribers out of a total population of 27 million people.

However, on an empirical basis, the evidence for the past 2 years shows that there has been a steady increase in numbers of people using the service on the SMS, with average hits in the region of 4,000–5,000 per month (Figure 10).

Figure 10: Changes in number of SMS hits in 2004–05



Farmers also provided evidence of how they had used market information to make decisions on growing different crops, selling into new markets and gaining price premiums through the use of MIS information. These findings suggest that most farmers who receive this information understand how it can be applied, and many farmers, especially those organised into producer marketing groups, are able to make tangible financial gains through receiving market information.

Comparison of the three main types of MIS being studied, including local MIS, national and regional MIS, revealed interesting results. In terms of quality of service, the local MIS scored very highly in three different, independent impact assessments. The surveys in this study, which evaluated the broader use of MIS, found a strong endorsement for the national service from farmers and rural traders, and a wide range of other user groups⁸. The use of regional market information based on this analysis was less convincing, although several analysts indicated that information on informal cross-border trade was useful. The regional service also provides market intelligence rather than market information; however, this type of information is of most use to speculative traders, a small minority in Uganda.

On comparing the three services, it appears that the national MIS provides the best value, as it is the most cost-efficient means of disseminating market information to millions of users, many of whom have no other source of such information and cannot pay for services. Our calculations found the costs of the national MIS were approximately 27 Uganda shillings per household (1.5 US cents), given a total of 4 million households. Of those interviewed who provided information on business gains, through the use of MIS, levels of up to 70% gains were observed, although the

⁸ (i) Farmers, especially farmer groups, (ii) NGOs, (iii) development projects, (iv) radio broadcasters and media houses, (v) government and policy analysts, (vi) relief agencies, (vii) business development services, (viii) research, (ix) banks and MFIs, (x) donor group.

average gains were in the 0–12% range. The national service also offers prospects for introducing practical links between prices and quality of products, as a precursor to the use of grades and standards. From a financial perspective, the national service, more than any of the other services, also offers possibilities for being developed into an embedded service within the next 5-year period.

Based on this analysis, a series of recommendations were made that may have wider implications.

Policy support

It is extremely beneficial for MIS to be securely embedded in the agricultural policy framework if such services are to receive long-term support from government and donor agencies. This can be developed through strategic research that evaluates the information needs of farmers and rural traders, their current means and levels of accessing market information, and the local infrastructure and services that could be used to provide such a service.

In Uganda, research in the mid 1990s provided government planning with clear evidence of the need for MIS, and, from that point MIS was prioritised within the agricultural development policy framework, the Plan for the Modernisation of Agriculture (PMA). Based on this strategy document, implementing agencies were able to develop project proposals to access public funds to support the development of national and local MIS services.

Sequencing of MIS types and products

There are many types of MIS that can operate at local, national, regional and export levels. These types of MIS provide different types of information to specific end-users. Based on the findings of the Ugandan survey, it was recommended that a country first establish a national MIS service. This type of service should provide regular price and volume information on the leading commercial crops and agricultural products.

There are advantages to this type of service being linked to other sources of market information, from neighbouring countries and export destinations, in that once a national service has been developed, there are good opportunities to complement the information within the country with the addition of local MIS services and market intelligence services. These complementary services can be very effective as they can focus on the needs of a more defined user group, and provide capacity-building in aspects such as how to use market information, linking farmer collective marketing groups to new market opportunities, and options such as speculative storage.

There have been several attempts to construct MIS from the district level upwards. However, these have failed due to the high costs and difficulties of scaling up such projects, and the limited ability of local services to provide useful arbitrage options, if they are not integrated with a local service. Sequencing should also be considered in the selection of products. The simplest starting point when establishing an MIS is to focus on products that are storable, such as cereals and grains. As competence is gained, other products can be included, such as export products, through the direct linking of information streams from terminal markets. This may include products such as coffee, tea, cotton and oil palm, which are traded at specific auctions and exchanges. The inclusion of more specialised and perishable products should be added only

when there is sufficient expertise present in the service, as this can require considerable extra effort due to the short-term volatility of the produce prices and demand conditions.

Clients and beneficiaries of an MIS

The main target group of an MIS are the many millions of poor, atomised farmers and rural traders who have little opportunity and means to pay for such a service. Secondary users include development projects, larger traders, processors, media houses, consultants, agricultural analysts, NGOs, research centres, relief agencies, parastatal organisations, government departments, donors, banks and other financial agencies. The service should be designed to demonstrate bias towards the primary clients, as the aim of such a service is primarily to reduce the asymmetry of access to market information.

Scope and scale of an MIS service

A national service should focus on the most commercial crops and be limited to the minimum number of provincial towns that can provide a sound measure of market condition and food security. The MIS should focus on the more commercial crops, and seek quality in the data rather than quantity of data. For a country the size of Uganda, with a population of 25 million, the MIS collects information on 27 commodities in 18 market centres. However, this recent review suggests that this should be reduced to 10–15 products and 10 towns. The reason for reducing the scope of the products and towns is to provide better quality rather than quantity.

Timeliness of market information

The regularity of market price and volume information depends on the type of produce that is being reported on. For storable, cereal produce it has been found that a daily update of basic goods should be provided from the country's main terminal markets. This information can effectively be supplemented with weekly data from major provincial markets. If the MIS is providing information on perishable goods, such as fresh vegetables and soft fruits, this will require daily updates in all markets, and in many cases more than once a day, due to the more volatile nature of the prices of these commodities.

Quality and premiums

While price is probably the single most important piece of MIS data, an MIS should complement price with information on market conditions, product volumes and, where used, the premiums that link price with quality parameters. In most cases, this additional information is not provided, due to the considerable extra effort required. Therefore MIS providers should start with price and market conditions, and then add quality-based data only for the most commercial produce.

In Uganda, the MIS is experimenting with volume and moisture content. The advantage of adding volume information is that, when it is integrated with price data, it is possible for the user to judge effective demand. Measurements of volume are generally crude, such as counting the numbers of trucks that arrive on a particular day.

Quality

Use moisture content as precursor to more widespread use of grades and standards. This will require that moisture meters are purchased and provided to all MIS collection points in the country.

Links with stakeholders

Many MIS operate as stand-alone projects; however, to be more effective, efforts should be made to enhance the utilisation of market information through closer ties with leading development projects and other market-based service providers. These groups should be integrated into the process of information gathering and use by their clients.

Education of user groups

To improve the utility of market information, the MIS should make efforts to build the capacity of farmers' groups by training them in how to use market information. This training should be carried out via other service providers and NGOs possessing considerable experience and effectiveness. In order to increase the ability of farmers to use market information, the MIS in Uganda developed and promoted a number of practice guides including: *Collective Marketing for Smallholder Farmers* (Robbins *et al.*, 2004), *The Market Facilitator's Guide* (Ferris *et al.*, 2006) and *FAO's Guides on How to Use Market Information* (Shepherd, 2003). In some cases these guides have also been developed into 10-part radio series, which radio managers could use to complement the broadcasting of market information news updates.

Service quality

To ensure quality of the service and avoid complacency, the agency that provides the future MIS should report on a quarterly basis to a board that is made up of people involved in produce marketing and extension. The performance evaluation board could include an international research organisation (such as the International Food Policy Research Institute, IFPRI), a private sector person (head of Uganda Grain Traders or similar), a representative from the National Agricultural Advisory Services, the Uganda Agricultural Productivity Enhancement Program, the Marketing and Agro-Processing Strategy and the Export Promotion Board. The terms of reference of this board should include an evaluation of progress, dissemination, costs and reviews by field agents.

Housing of an MIS service

To be most effective, it could be argued that MIS should be maintained as an outsourced service. As stated previously, the view is that MIS should not be developed within an existing government department or parastatal, due to the perceived lack of innovation and poor past performance associated with being operated by government agencies in the past. The service should strengthen links with stakeholders to improve business performance and revenue opportunities, and also to increase stakeholder involvement in data collection and analysis.

Who should run the service

MIS services should be implemented by NGOs or a consortium of public- and private-sector people. Criteria for selection of who should operate the MIS should be based on: (i) experience in the provision of business support services; (ii) no conflict of interest in terms of provision of information and the ability to trade; (iii) ability to operate in a transparent and efficient manner; and (iv) a business design that fosters greater private-sector integration into the service. Through this process, the Plan for the Modernisation of Agriculture and the National Agricultural Advisory Services should establish a highly professional MIS that meets the needs of user groups identified in the study.

Project design

To promote performance and innovation of an MIS service, future projects should be designed, where political and economic circumstances allow, through a tender process that achieves basic goals: (i) maintaining a professional MIS; and (ii) privatising the service. In Uganda, the new MIS project will therefore start with a call and evaluation of proposals from public-private-sector partners that combine service quality with a business plan outlining how such a service could become self-financing, within a 5-year period. This may be achieved through the generation of resources, through means such as advertising, consultancy, or embedding the service into other business structures and services. Funds for the project should be made available through a tender process that is renewed on a 3-year basis. Funding should be channelled through a responsible agency, overseen by a local marketing and business development steering committee.

These ideas focus on some of the issues that should be considered when designing an MIS. It is hoped that such ideas will continue to maintain high levels of performance and innovation into the future. It is likely that donor funds for services such as MIS will continue to decline, unless new approaches are found that successfully integrate the business acumen of the private sector and still provide services to those in need, but are unable to pay for such services. Therefore developing these transitional projects and finding ways of facilitating the privatisation of business development service services is of the highest priority.

References

- Shepherd, A., Lutz C. and van Tilburg A. 1997. Market information services, the theory. *FAO Agricultural Services Bulletin* 125, 2, 5–15.

Guidelines for building sustainable market information systems in Africa with strong public–private partnerships

Michael T. Weber, Cynthia Donovan, John M. Staatz and Niama Nango Dembélé (Michigan State University, USA)

Many years of experience of working with the Malian, Mozambican and Zambian agricultural marketing information systems (MIS) indicates that there are at least six essential factors in the successful design and implementation process, as follows.

1. An initial political commitment to an MIS by country-level policy-makers as well as private clients, guided by a vision of how such a system can help both private and public sectors.
2. A persistent financial commitment over the medium term by local, national and external funding agencies to help establish and demonstrate the pay-off to such a system.
3. Constant targeting and reassessment of the information needs of users, which is essential to building long-term political and financial support of the system.
4. Development of local capacity within the MIS to acquire and use a thorough knowledge of the people and processes in the marketing systems of the country.
5. Development of the human capital for managing the system.
6. Choice of the appropriate institutional ‘home’ for managing the system.

Steps for MIS design and implementation by category of activity

Group discussions at a workshop of MIS professionals, held in Maputo in November 2004, identified four categories of action that help achieve and reinforce the six success factors discussed above.

Strategies and actions for achieving a customer-service orientation in the MIS

An essential element in building long-term support for an MIS is to instil within the organisation an entrepreneurial spirit that views the users of MIS information products as the organisation’s customers. Customer needs, rather than bureaucratic routines, should drive the MIS’s choice of products and services. It is this dedication to serving client needs (success factor 3 in the list above) that is part of the vision that leads to initial political commitment to support developing the MIS (factor 1) and the funding commitment that allows the MIS to establish itself (factor 3).

- From the beginning, it is important to identify target client groups in both private and public sectors, their needs, and appropriate means of communication and dissemination, setting priorities among them. Different MIS customers will have different information needs, and the most efficient means of disseminating information to them will differ as well.

- In addition to targeting the private sector (including farmers), an MIS has to involve, from its inception, as many strategic leaders as possible in the government, policy advisors, other key ministry people, and outside interested people, including donors. Such involvement is necessary because the system has to be in contact with policy-makers as well as private-sector clients in order to build trust in the system among the broad array of potential users of MIS. In order to build strong support for the MIS, the system should identify key policy-makers (local government, national government and donors) who will be vocal and supportive of the MIS, and be especially careful to meet some of their priority needs.
- A reputation of service and timely outputs is best developed when an MIS is kept simple and manageable, particularly in the beginning, with very specific objectives and narrow focus. Additional information and analysis products should be added in a stepwise process that is client-driven.
- Including basic information about agricultural inputs should be considered as an MIS grows, but a system can rapidly be overloaded when a large number of both commodities and inputs are covered during the early years of MIS operation. Decisions about input information need to reflect country-level production and marketing conditions, actual farmer use of commercial inputs and, perhaps most importantly, consideration of client information needs related to commercial inputs.
- Good raw data collection and management are critical from the outset, but, even in the beginning, there needs to be an emphasis on converting raw data into strategic information and knowledge products for a range of clients.
- In the process of developing an MIS, the implementing partner(s) must be able to look beyond such short-term objectives as covering the system's costs or generating a profit, and recognise that an MIS also produces important public goods that would not be necessarily produced by a purely private-sector organisation.
- The process of identifying which information products the MIS should produce needs to incorporate the following considerations:
 - (i) The ongoing process of prioritising needs of different stakeholders is critical if an MIS is going to build a reputation of service. A consultative process is necessary to reach consensus about priorities.
 - (ii) For many users, it is the local generation of information that will ensure local needs are met, using local means of communication, and this can be achieved through local-level partnerships.
 - (iii) To address regional needs beyond national boundaries, a co-ordinating mechanism to facilitate exchange and learning among the national systems is more likely to be successful than a new regional MIS run as a separate system. A co-ordination approach should give high priority to helping give visibility to the national systems, so that they and their national clients remain in the spotlight.
- A service orientation for public as well as private clients can be enhanced by developing a system of policy briefs or timely analysis that may act as a useful tool for policy-makers during critical events, providing technical advice to help avoid or mitigate crises and give assurances to private-sector clients that realities of market conditions are being considered by policy-makers. Such actions are needed to help establish the value to public and private

decision-makers of the MIS as a source of information that merits continued funding and improvement over time.

- (i) It is crucial that an MIS be alert to emerging crises or critical events, and that early in such events, it should start generating information products that analyse market conditions and potential roles for private and public people. Bringing such information to the attention of policy-makers can provide them with information to design appropriate responses.
 - (ii) Given the large number of net buyers of basic food commodities in rural as well as urban areas of many African countries, assessments of market improvements to lower the cost of food for consumers are very important. MIS analysts have important roles to play in using MIS information to help follow consumer markets, and to make assessments and recommendations.
 - (iii) Markets are always being restructured, either because of adjustments to changes in population and consumer income, or due to changes in the rules set by government policies about how markets can operate. MIS data and analysis are essential to help inform options about this market restructuring.
- Facilitating the interaction of private-sector buyers and sellers is important for an MIS, but an MIS is distinct from a commodity exchange. A commodity exchange may be developed based on an MIS, and uses the information from an MIS, but the objectives of a commodity exchange are more limited than the broader market development goals of a well designed MIS. The commodity exchange functions can be served by a strictly private agency operating under the profit motive.

Activities to promote outreach and dissemination of MIS products

The constant targeting and reassessment of the information needs of the users (success factor 3) also requires a strategy that effectively disseminates information to MIS clients and captures their feedback. Activities contributing to an effective outreach and dissemination strategy include the following.

- Establish reliable links between farmers and buyers through private-sector traders and processors, including their trade and farmers' organisations, by identifying the information needs of these groups, as well as the types of information they may be able to provide the MIS.
- Establish reliable links with farmers' associations and the NGOs that work with them, both as users and suppliers of information.
- Emphasise local-level participation in the MIS processes, seeking involvement as both suppliers and users of information, to ensure a balance of services for the different clients.
- A mix of products and dissemination channels will always be needed and, to be most effective, these need to be tailored to different client groups' most critical information problems. (i) For farmers, local traders, and consumers, radio is probably the most effective (decentralised, local languages, responsive to local needs); (ii) a whole range of traditional written outputs is typically needed to reach different clients; (iii) modern ICT tools, such as the Internet and cell phones, need to be considered and used. They do not always substitute, however, for conventional communication tools, especially for providing broad-based,

unbiased information to help improve the bargaining power of farmers (e.g. through rural radio) and in informing public decision-makers about how markets function in response to basic supply and demand forces, and how a lack of competition can affect market performance.

- MIS can facilitate local-level buying and trading by using voluntary information from each side that allows identification of major traders in specific products, posted on market bulletin boards or in printed bulletins (e.g. directories of traders in a given region). However, it is unlikely that MIS can provide daily information on who is buying or selling what. Here, commodity exchanges or electronic markets are better suited to provide and diffuse this sort of complementary information.
- Seek and develop best practices in training staff for MIS communication, in terms of both content and means. Collaboration with local journalists is particularly useful in ‘translating’ the MIS messages into a language that is easily understood by the system’s various audiences.
- Marketing extension can be accomplished through partnerships between MIS and public-sector extension agents, media producers, farmers’ organisations and NGO staff. Recent NGO emphasis on markets and agricultural production for market sales presents an opportunity for the MIS to partner with them for extension.

Steps to achieve capacity building and ongoing quality improvements in basic information and analysis

The fourth success factor listed above is the need to build skills within the MIS staff to (i) understand agricultural markets and how they are evolving; and (ii) effectively communicate that knowledge to various MIS clients.

- The MIS staff must develop thorough and practical knowledge of the market systems or channels of the country. Marketing channels and new buyer/seller arrangements evolve, and MIS staff must plan for time to study and understand these trends, ready to modify the mix of information products and services as the market changes.
- As discussed above, it is important for MIS to develop a system of policy briefs or timely analyses to inform policy-makers during critical market events. By providing technical advice to help avoid or mitigate crises, the MIS establishes itself as a valuable source of information that merits ongoing funding. But in order to produce such analyses, MIS staff must include some people who understand how markets work and have some comprehension of policy issues and policy levers. This has implications for investing in staff skills early on. Such investment cannot focus uniquely on statistical and computer skills, important as those are, but must also include understanding of market and policy processes.
- Develop a rolling 5-year strategic plan for staff development, including both skills enhancement for existing staff, and training of replacement staff for anticipated staff departures and expanded analytical needs for the MIS. Prioritising human resource development and retention of skilled staff, particularly in the early years, including staff at local level, is one of the most critical aspects for sustainability.
- Use the project-funded time to help build team spirit and a sense of mission, identifying staff members who are committed and capable, who will then sustain the MIS when it shifts from project to public-private-sector financing with a resulting increase in uncertainty resulting from the loss of ‘automatic’ project funding.

Guidelines for effective administration and implementation of MIS

The final two success factors noted above involve developing managerial capacity, and an appropriate institutional home for the MIS. These issues are closely linked to developing a viable strategy for financial sustainability of the system.

- Donors and special projects can be instrumental to help ensure medium-term financial support (5–10 years) that can adapt with growth in the system.
- MIS may start under special project funding, given high investment costs for the initial system establishment; however, the public sector has to work closely with the private sector to develop ownership of the system and eventually become joint promoters and funders of the MIS.
- Careful strategic planning is needed to conceive ways to enable transitions from project to a government and private client-supported MIS.
- In industrial countries around the world, MIS retain important public-sector and policy information objectives, as well as an orientation to key private clients. If the services to the private clients are effective, they will be more willing to help pay for some of the products and services, and will also become the best lobby and support group to pressure government to provide adequate and reliable public funding for the MIS.
- The appropriate institutional home depends on the environment in which the MIS is operating; however:
 - (i) it is important to place the MIS in a structure where users of its services can demand accountability and put pressure on the system for good performance
 - (ii) given the ‘public good’ nature of some of the MIS’s services, some public sector financial support must be provided, regardless of the system’s location.
- While the MIS needs to be accountable to its customers, it also needs significant managerial autonomy to carry out its tasks efficiently:
 - (i) management of the MIS must be fluid and efficient – if the system is under bureaucratic management, an MIS will be less able to adapt to market dynamics and respond to emerging needs
 - (ii) if the MIS is far down in a hierarchical structure within a ministry or other structure, then budgetary problems and periodic problems of a lack of liquidity are likely to occur, and resources intended for the MIS may be siphoned off for other purposes.
- The credibility of the MIS ultimately depends on the perception that it is providing objective, unbiased information. Therefore the system needs to have structures (‘firewalls’), such as external advisory and review panels, that help guarantee the objectivity of the information and prevent the perception (or reality) that someone in the MIS’s institutional home is manipulating the information for their own ends. Being able to guarantee the objectivity of the data and the analysis will be a critical factor in choosing the institutional home for the system.

National MIS: experience in the Pacific

Taimalietane Matatumua (Ministry of Agriculture, Samoa)

Market information can be used by those involved in the marketing process to make better marketing decisions.

The primary objective of an MIS in most South Pacific islands is to increase the degree of knowledge of market participants (farmers, traders and consumers) about the market. Improved access to information leads to an improved understanding of the working of the market. This means that decisions made by the participants should be more informed and the profitability of their operations should be enhanced. Government planners and policy-makers should also benefit by the provision of market information, in that policies and programmes should be based on an improved understanding of the market. An MIS must therefore focus on the information needs of the different target group.

Samoa's National MIS

In Samoa, the MIS is run and fully funded by the government through the Ministry of Agriculture and Fisheries. It is a newly established service and it is in its early stages.

The Ministry's aim for this MIS is to improve:

- decision-making for all stakeholders
- competition
- operational efficiency.

Data collection

Like any other MIS, the main focus is the collection of the following data:

- current prices of different crops and different varieties
- prices in different markets
- seasonal price trends
- historical price series
- quantities supplied.

Local agricultural data

The collection of data for the locally available agricultural supply and prices is conducted by the Central Bank of Samoa (CBS) and the statistics division of the Ministry of Finance. This has been an ongoing activity for these two government departments, and the statistical data collected have already been institutionalised.

Surveys are conducted weekly at the two major markets (Fugalei and Salelologa market) in order to collect quantities supplied and prices. Every Friday is chosen as a representative sample for

the whole week. The information gathered is published as a monthly news bulletin by CBS. A variety of agricultural crops are included in the CBS news bulletin. The main crops are: taro, taamu (giant taro), banana, taro palagi (xanthosoma), coconut, Chinese cabbage, head cabbage, tomatoes, pumpkin and cucumber.

The Policy Planning and Communication Division (PPCD) of the Ministry of Agriculture has recently made arrangements with CBS and the Statistics Division of the Ministry of Finance, in order for the PPCD to receive the raw data every week.

Agricultural export and import data

Samoa export and import data are collected by the Ministry of Revenue (Customs Department) and the Quarantine Division of the Ministry of Agriculture and Fisheries. This information is normally given out to their usual stakeholders on request, free of charge.

The Pacific Island Trade and Investment Commission in New Zealand and Australia produces a fortnightly list of average wholesale prices of various agricultural commodities.

The Ministry of Agriculture and Fisheries has access to world market prices each week. This has made possible by paid subscription for a *Public Ledger* newsletter published by Agra Informa Ltd.

It would be unlikely that the focus could be on all the available agricultural produce. For that reason, commodities will be prioritised or ranked according to level of consumer demand, prices and availability of markets overseas.

Data analysis and dissemination

The information gathered is analysed by Ministry of Agriculture staff into a simple format to be easily understood by the target audience in a fortnightly newsletter, *The Market Link*. This newsletter is then disseminated to other government departments, processors, importers, exporters, middlemen and farmers.

The Market Link is translated into two languages: English and Samoan. Due to the fact that most farmers are illiterate, the Ministry of Agriculture's weekly radio programme is utilised to deliver market information. The local newspaper is also used as a means of disseminating market prices and quantities supplied, as well as daily exchange rates.

Concrete measures for Samoa's MIS

The Strategies for the Development of Samoa highlights the development of commercial production, and this calls for the Ministry of Agriculture to respond to certain areas, including:

- initiatives to recommence taro and cocoa exports
- rehabilitation of the coconut industry
- efforts to develop fruit exports
- improvement in produce for the local market.

The development of these areas requires a good MIS. Marketing information not only helps farmers make profitable decisions in the short term on when and where to market produce, what prices to expect, and what to produce or grow – but it also plays a vital role in the functioning of

the whole market by regulating the competitive market process. By helping to ensure that produce goes to market where there is a demand for it, marketing channels are shortened, and this cuts down on transport costs. Advances in information technology now make it feasible to provide small-scale farmers with the marketing information they need. It is therefore not enough for marketing information to be collected, it must also be disseminated in a form accessible to farmers and adapted to their needs. An efficient and timely MIS enables effective and successful market development.

Constraints

- The main constraints to marketing in the Pacific can be attributed to a lack of infrastructure and marketing facilities.
- The remoteness of Pacific island countries and high transportation and shipment costs make efficient marketing difficult.
- There is competition between other, larger countries on certain produce.
- With the exception of sugar, ginger and other spices in Fiji; cocoa, coffee etc. in Papua New Guinea; squash and vanilla in Tonga; papaya and noni in Cook Island and Samoa; and kava, root crops, copra and coconut oil in other Pacific island countries, marketing systems for most other agricultural produce in the region are generally poorly developed.
- Post-harvest handling of produce is poor, due to lack of technology and knowledge.
- Quarantine restrictions are another limiting factor in marketing agricultural produce.
- Through the introduction of simple processing technologies, waste levels can be reduced, and the shelf life, economic returns and export earnings of produce increased.

All the above issues have been our concerns in the past, and that is still true today. Marketing agencies in Pacific island countries are small, and they also lack the necessary resources and market intelligence to organise and supply the right product at the right time. As a result, they are unable to exploit market opportunities fully.

But looking at the challenges beyond agriculture and marketing, health and environment are now becoming important new partners to the production sector.

MIS is therefore becoming even more important to Pacific island countries if we are to compete with other producers internationally.

Conclusions

Ultimately, the expected MIS for Samoa will play a vital role in the marketing activities and market issues of the stakeholders. Although there are likely to be constraints, there is a possibility that the advantages and opportunities for a well managed MIS will outweigh these problems.

Evolution of the West African market information platform, RESIMAO

Henning Knipschild (ZADI, Germany) and Gaston Dossouhoui (ONASA, Benin)

Réseau des Systèmes d'Information des Marchés en Afrique de l'Ouest (West African Market Information Systems Network, RESIMAO) has launched a web platform to exchange data among the national market information systems (MIS) in West Africa. Market information is monitored and displayed via GIS. The information is accessible by the public.

Members of the RESIMAO network are the official national market information authorities from eight francophone countries. RESIMAO (www.resimao.org) is an official instrument of the Communauté Economique des Etats de l'Afrique de l'Ouest (CEDEAO): Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Senegal, Togo, Nigeria.

This is a collaborative project of RESIMAO, CTA, Zentralstelle für Agrardokumentation und -information (ZADI) and USAID's Market Information Systems and Traders' Organizations of West Africa (MISTOWA) project.

Data collection – collaborative editing

How market price data are collected

Presently, the market information is inserted into the information system by nine official national market information authorities. These authorities are also in charge of providing annual reports on the countries' nutritional status to the FAO. Trained market observers regularly collect market information on 390 markets throughout the network (approximately 50 markets per country). Presently, the main focus lies in the collection of market price information for staple foods. Participating countries also provide information on cultivated land, expected yields, available stock and precipitation.

Collaborative editing

Information is inserted into the web-based system by different people in all partner countries. The system can distinguish between people with different editor rights. The data input can be done from any computer with Internet access, including Internet cafés. Geographic referencing of all the data (GIS) reflects data ownership throughout RESIMAO.

Setting up the network to collect all different kinds of relevant data

Presently the network is concentrating on the collection of market price information. It is envisaged that the mechanisms of collaboration within the network will be managed in such a way that, in future, observers can collect other relevant data, such as climate data and information on the status of agricultural production.

Three motors driving the collection of relevant data

The driving mechanisms of an operational collection of relevant data will be a functional network, an efficient financing system, and web-based collaborative collection of data. Presently, a controlling system is being designed, allowing for individual payment for every data set that is entered into the system. This will allow the partners of the network to provide a powerful service. Enquiries can be conducted through a network with radiating structure, the successful performance of data collectors is controlled via the web, and data holding is organised on a web-server.

According to the conditions experienced, it is of the utmost importance that the driving forces of an information system develop slowly in parallel, prospering through interaction. Only then can the correct balance be achieved between the people accomplishing the enquiries, the funding, and the data-holding, with the resulting provision of accurate information.

How to get data on and from the server

Depending on the region, access to the Internet has become more prevalent in recent years. Users publish information online or via e-mail. Because of difficulties in accessing the Internet, many other methods have been developed for communication between users and information systems. The intention is that our web-based information systems will also start distributing information via print and radio.

In collaboration with ZADI, the market price agency Office National d'Appui à la Sécurité Alimentaire (ONASA) in Benin has set up a server that sends market price information to the mobile phones of users. Users send a message code via SMS to a server, which indicates what kind of information (which market, product or variety) they would like to be informed about. On demand, a system can easily be developed where data are inserted into a system and sent via mobile phone to the server. This system has not yet been implemented, as the use of mobile phones in many countries is restricted to urban areas.

The knowledge resources of many people living in rural areas or isolated regions are of great potential, and could be presented to a wider audience if only contact with these people can be established. And by getting into contact with these people, information systems will assuredly be able to provide information that meets their needs and interests.

Main activities of RESIMAO – with specific focus on the information system

Area of intervention

Information providers (members of the RESIMAO network) are the official national market information authorities from eight francophone countries. As the network has observers on every market in the region (around 400 markets), the link between public administration and merchants may easily be established. Presently, an additional service is being transferred from a prototype status (running for approximately 2.5 years) to a broad status: a global system for mobile communications (GSM) server sends out SMS to registered public users to allow dissemination of price information.

Services provided

A web-based database for data collection, via collaborative editing, with various modules for data output, open to the public. Data ownership is reflected through geographic labelling via web-GIS – a dynamic map indicating market information.

Client profile:

- policy-makers (members of RESIMAO)
- information managers (members of RESIMAO)
- scientists (interested in market price information)
- the public with access to mobile phones and Internet
- the public reached via radio.

Information concept

How are clients/users identified?

The main users of the system are colleagues from RESIMAO, who have a defined task: to inform on market prices in the region. As the information system was built in cooperation with, and under the assignment of RESIMAO, which is a network which developed autonomously, the system was well accepted.

Are the services free, subsidised or paid by clients?

At present, the system is subsidised by different funding agencies and the governments of the member countries. Funding concepts are being developed.

How do people take advantage of your services?

As stated previously, market information is disseminated via the web, SMS and radio.

What is working work well, and what is not working well?

The information system could be established within a few months, and as it has been launched in cooperation with influential partners, it runs well.

Is the service area competitive or highly restricted?

The service is free to the public, and open. The area for content management is highly complex, responsibilities are shared by managers, and the area is password-protected, but accessible via the web.

How do farmers and traders take advantage of these systems?

Mechanisms for further dissemination of the information are being explored. ZADI also hosts a question-and-answer service for farmers (QAS, www.runetwork.de), which may be linked in future, but this concept is still subject to discussion.

MISTOWA: using ICTs to offer MIS that can promote the trade of agricultural products in West Africa

Patrice Annequin (MISTOWA/IFDC, Ghana)

The Market Information Systems and Traders' Organizations of West Africa (MISTOWA) project of the International Center for Soil Fertility and Agricultural Development (IFDC) supports regional agricultural producer organisations and trader organisations to facilitate the trade of agricultural products in the Economic Community of West African States (ECOWAS) countries. The strategy developed by MISTOWA relies on the one hand, on the common use of market information available in the sub-region; and on the other hand, on capacity building of producers and traders to enable them to access and use this information to develop their business. A considered use of new information technology will allow a noticeable improvement in the quality, accessibility and commercial use of market information produced by public and private MIS. The Internet and mobile telephony (SMS) are the two main media that allow organisations to develop, rapidly and simply, commercial information services, which their members at local, national or regional level can use.

For ECOWAS⁹, the efficient and developed trade of inputs and agricultural products would be a powerful tool to support the economic growth and the dynamism of the regional integration, improve food security, and reduce in a general way the poverty of its inhabitants.

Yet, in 2004, intra-regional exchanges of products and agricultural products were evaluated at approximately US\$400 million per year, whereas the internal market in the same economic area amounted to US\$24.4 billion, and exports outside ECOWAS represented over US\$6.7 billion (IFPRI, 2004). The very low level of exchanges within the region may be partly due to limited and inadequate access to the agricultural market information by economic traders and participants; to the lack of organisation of producer organisations and trader organisations; and to a political and economic environment that is not conducive to trade.

Mainly financed by the West African Regional Programme (WARP) of USAID¹⁰, and implemented by the IFDC¹¹, the MISTOWA¹² project's main aim is to promote the trade of

⁹ ECOWAS is a regional group of 15 countries of West Africa (Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, the Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo), accounting for 260 million inhabitants, of which half live in Nigeria. www.ecowas.int

¹⁰ The MISTOWA project, which covers the period 2004–08, benefits from an overall budget of approximately US\$15 million, of which 80% goes to USAID/WARP, the remaining amount being mainly distributed among Agriterre (The Netherlands) and bilateral missions of USAID. www.usaid.gov/locations/sub-saharan_africa/countries/warp

¹¹ IFDC is a public international organisation created in 1974 and has its headquarters in Alabama (USA). Lomé (Togo) has been its African Headquarters since 1987. www.ifdc.org

¹² MISTOWA's aim is to increase the value of trade exchanges by at least 20% by the end of the project. www.mistowa.org

agricultural products within ECOWAS. The implementation strategy consists of three key aims: first, pooling and improvement of the quantity, quality and accessibility of available market information within the sub-region; second, strengthened capacities of producers and traders to access and use this information to develop their businesses; and third, project collaboration with sub-regional institutions (ECOWAS; the West African Monetary Union; the Comité Inter-Etats de Lutte contre la Secheresse au Sahel) for the implementation of agricultural and economic politics and the development of infrastructure – transport and communication for instance – which facilitates agricultural trade.

Evolution and strengthening of agricultural MIS

In West Africa, especially in the French-speaking countries, most MIS arose out of the dismantling of the cereal offices. As a result of the liberalisation of these countries, and of the privatisations that have taken place over the past 20 years, these offices have been replaced by public structures in charge of managing food security stocks. These structures are backed by MIS, which informs about the price trend (and sometimes available volumes) related to cereals, based on a sample of markets that are considered representative (rural or urban markets, and terminal markets, for example).

Today these MIS remain public services that cover in priority the cereal products in their respective countries¹³. In 2005, the eight MIS members of RESIMAO¹⁴ used a network of surveyors, collecting on over 400 markets each week the wholesale prices for producers, and the retail prices for consumers.

Most of the operators of these MIS mention the following constraints to explain the very low use of those services, which are free of charge. Information is often obsolete when it reaches them; its reliability is sometimes uncertain; accessibility is reduced because dissemination is often limited or inappropriate; the number of monitored chains is limited. Moreover, the operations of these MIS are aimed at food security issues first and, using primarily the price factor, they do not provide other important information, such as direct supply and demand, the availability and costs of transport, the quality of the product or marketing conditions. The national compartmentalisation of MIS renders access to market information of the other countries almost impossible for traders operating at the regional level. Finally, each year there is uncertainty about their renewal, given the financial situation of many countries, as they may be operating budgets that are already very low.

¹³ This is the common case. Some MIS cover other products, such as livestock or specific fruits and vegetables.

¹⁴ Réseau des Systèmes d'Information des Marchés en Afrique de l'Ouest (West African Agricultural Market Information Network). The members of RESIMAO created in 1999 are ONASA (Organisation nationale d'appui à la sécurité alimentaire, National Organisation for Food Security) in Benin; SONAGESS (National Food Security Stock Management Company) in Burkina Faso; OCPV (Office d'Aide à la Commercialisation de Produits Vivriers) in Côte d'Ivoire; SIPAG (Système d'Information des Produits Agricoles de Guinée, Agricultural Products Information System of Guinea) in Guinea; OMA (Observatoire du marché agricole, Observatory of the Agricultural Market) in Mali; SIMA (Agricultural Information Market System) in Niger; and MIS/CSA (Commissariat à la Sécurité Alimentaire, Food Security Office) in Senegal. OPAT (Togo Agricultural Produce Agency) and DSID (Direction des Statistiques Agricoles, de l'Informatique et de la Documentation, Ministry of Agriculture) both represent Togo.

After having carried out detailed consultations with these MIS and the users during the project conception, MISTOWA committed itself to them, that it would use a strategy that would allow all economic operators to have an easy access, at a low price, to complete, reliable and updated market information that would cover all the countries and products of the sub-region.

This is possible especially thanks to the rapid development of the Internet and the mobile telephony¹⁵. To summarise the current situation, we could say that today, in West Africa, 100% of producers who have marketable surpluses have access to the radio; 100% of traders in a position to commercialise these surpluses on the main national urban markets or in adjoining countries use mobile telephony; and 100% of national professional producer organisations or trader organisations, to which these operators belong, have access to the Internet. In this way, the project tries to support the emergence of a regional second-generation MIS, able to 'regionalise' and also to 'decentralise' the agricultural MIS by using the available new ICTs, but also by using more traditional dissemination means.

It then agrees with its partners to:

- redefine roles, involving producers, traders and their organisations in the information-gathering and -dissemination processes
- share existing information at a regional level (regionalisation), based on public and private MIS that are decentralised
- use the new ICTs reasonably, especially the Internet and mobile telephony.

Supporting RESIMAO to bring together market information managed by public MIS for collective use

With the technical and financial support of MISTOWA and CTA, and the technical assistance of Zentralstelle für Agrardokumentation und -information (ZADI, a technical department of the German agricultural ministry; www.isicad.org, www.zadi.de), RESIMAO has developed a 'road map' for 3 years (2005–07). This road map includes:

- progressive common use of all the information collected
- harmonisation of the methodologies and of information-gathering and -processing tools
- development, according to an iterative process carried out by the MIS, of an electronic platform that allows information on prices to be put online, to process the information and to make it available
- progressive extension of the covered chains, such as livestock, fruit and vegetables, and fertilisers
- progressive extension of the geographical coverage to the 15 countries of ECOWAS, with the possibility for RESIMAO to become a specialised agency on agricultural market information.

¹⁵ Refer to the maps and documents in the regional atlas of ECOWAS transport and telecommunications: www.oecd.org and www.wa-agritrade.net

Today the MIS can already share most of their price data for over 50 main markets, on the same database and on the same RESIMAO website (www.resimao.org). The deadline for public availability has been considerably reduced. A GIS shows the prices on thematic maps and provides a direct and easy view of the regional situation. In November 2005, Nigeria joined RESIMAO through the membership of its National Agricultural Market Information Service.

In 2006, version 3 of the platform will be implemented, which will allow researchers trained beforehand to put the collected information directly online, and will allow users to receive information by e-mail, fax or SMS.

Developing tools that maximise dissemination of information based on new ICTs

The project is also implemented in collaboration with BusyLab, a computer company based in Accra (Ghana). Since 2002, BusyLab has been developing TradeNet (www.tradenet.biz), an integrated management platform of commercial information for the agricultural sector. It is on the basis of this software that the West Africa agri-trade network implemented by the MISTOWA project operates. The project seeks to put in common, and at the disposal of any potential user, the existing market information in the sub-region. This same software is also used by the MIS in Honduras and Uganda.

With less knowledge and computer equipment, this online platform allows any duly registered user to update, look for and disseminate prices, to search for professional directories, make bids or offers, or even disseminate news. Particularly innovative functions include the integration of SMS services for updating, sending and receiving prices or commercial offers; and the possibility of publishing information automatically (prices, offers, news) by e-mail or SMS for a group of operators. Any organisation that so wishes can personalise the tool to make it its own Internet information management platform – for instance by defining its markets and products, by specifying the information to be shared among its members and the information to be available to the general public or to other chosen organisations, or even by self-managing its system of dissemination of offers by SMS.

During the project, MISTOWA pays the cost of the TradeNet software licence for all the countries of ECOWAS and the professional agricultural organisations that wish to use it for their own needs. In tight collaboration with Busyland, the project team advises, suggests and tests the development of new possibilities, depending on the needs identified and expressed by the partner organisations of the project.

Thanks to www.wa-agritrade.net, the project has already enabled collecting and putting online most of the information available to the partner organisations. At the end of 2005, more than 30 correspondents, in Nigeria and Ghana, for instance, were providing the platform with new prices and other pieces of information on the main markets every day. The West Africa agri-trade network is also used as a particularly useful extension tool, because it allows all the professional partner organisations to discover the possibilities and advantages of such an information system, and to benefit from an online, free-of-charge and permanent distance-learning system.

Assisting producer organisations and trader organisations to develop agricultural MIS for their members

As professional organisations develop, many initiatives are created to put in place services for their members, market information and assistance to trade representing the top priorities for many of them.

Let us mention the example of ANOPACI¹⁶ in Côte d'Ivoire, which has developed a network of village information desks since 2003, or RECAO¹⁷, which co-ordinates the setting up of information and communication services within the agriculture chambers in seven countries, or also the association for the market development of Dawanau (DMDA in French, Kano, Nigeria) which relies on a community information centre to inform its approximately 50,000 active members about this market, which generates a turnover of almost US\$5 billion per year.

To back these private and public initiatives, the project has a grant portfolio of around US\$2 million. Thanks to the equipment grant available in 2005, some 18 partners of the project have purchased computer hardware and have been able to access the Internet, as well as utilise the technical training that is needed for its use. Competitive grants are also available to allow, for instance, a local association of professionals from the same sector to dispose of equipment or to put in place a network of surveyors; a cybercafé situated in a rural area to receive training to disseminate services and advice concerning trade, etc.

In this way, the project encourages and endorses the creation or capacity building of agricultural market information desks within producer organisations and trader organisations. As from 2006, over 60 information desks within the sub-region will be using these tools, allowing the dissemination of personalised market information to several tens of thousands of different producers and traders.

¹⁶ National Association of Professional Farmers of Côte d'Ivoire. ANOPACI is a member of Réseau des Organisations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest, ROPPA (www.roppa-ao.org).

¹⁷ Regional Network of the Chambers of Agriculture of West Africa; it consists of the national chambers of agriculture of Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger and Togo.

TRADENET – developing market information systems for smallholders

Mark Davies (BusyLab, Ghana)

TRADENET is a stand-alone market information service (MIS) software. It is probably the first of a new generation of software products that offers institutions and organisations with an off-the-shelf solution to their information content, aggregation and distribution needs. This paper describes how TRADENET was started, what it is today, and where it is going in terms of strategy and development. Following a technical introduction to TRADENET, this paper seeks to explore some of the general issues about the role MIS can play, specifically in facilitating greater commercial thinking and decision-making for smallholder producers, and explores why marketing services need to be developed. The final section deals with opportunities and challenges that exist as this new sector reaches maturity, and strives for standardisation.

BusyLab and TRADENET

BusyLab is a small research and development company based in Accra, Ghana with a special focus on technology and development. Our current focus is on providing a set of tools and services to farmers and traders. This product is currently called TRADENET; it was launched in 2005 and is currently providing information on the Internet and via mobile phones for 11 African countries and two South American countries.

How TRADENET started

After 3 years of promoting ICT for development in Ghana (by building Africa's largest private technology centre, BusyInternet), there was some frustration in the lack of some simple but convincing stories to show how high-tech and the information highway could be usefully deployed in the field and help African communities in wealth creation. In discussions with Technoserve in 2004, it emerged that one avenue might be based on the needs of rural farmers who were seeking better price information for their commodities.

BusyLab started research into what products were available for farmers or NGOs supporting farmers in the area of market information, and was surprised to discover that basic Excel sheets were still being used, and that there were no software products available, and proposed that they took advantage of the new technologies, to allow information to be more easily collected, stored, analysed and distributed. Assuming such MIS would inevitably be required in each country, BusyLab initiated a pilot project to develop a simple price collection and distribution software, managed through the web, and distributed via e-mail, web and mobile phone.

BusyLab recognised the opportunity that mobile phone networks were offering in Africa, by extending communication into rural and semi-urban areas; and doing this much more quickly than incumbent telecommunications companies. In part funded by FAO, the BusyLab team started a collaboration with the FOODNET programme in Uganda, which had been developing MIS for the previous 4-5 years. They already had considerable experience in gathering and

distributing market information via radio, SMS and the web. They were also providing one of the only non-government national MIS in Africa, and were keen to find collaborators who could assist them in being a more efficient operator.

In our rapid survey of national MIS, several issues rapidly emerged.

- Most MIS were **not developed properly** with the appropriate functional specification or needs analysis common to professional software development. Rather, the tools were a mix of poorer technologies, that often required multiple entry, were prone to data loss and, in some cases, ran the risk of confusing data sets.
- The **target market was not clear**. Complex web interfaces were serving the needs of donors and partners, and it is arguable whether they were providing real value to end-users, if they were indeed traders and farmers. Only the very largest and most sophisticated of traders would have access to these types of application, and certainly not the millions of smallholder farmers who the service aimed to serve.
- The tools and information provided were benefiting only the most tech-savvy and well connected traders, thus possibly **further marginalising the smaller traders and producers** and providing advantages to the wealthier traders.
- National MIS were commissioning and paying for these systems, but without understanding the associated costs of software development on this scale, and frequently finding themselves in a position where they were **unable to support the ongoing development costs** required.

TRADENET 1.0

To address these issues, TRADENET was initially established to support a national MIS: allowing national players such as Ministries or NGOs that had been outsourced with this responsibility to use a set of tools to collect and distribute price information. Additional content ‘modules’ were added, as it became clear that news, archive documents, contact profiles and offers to buy and sell would all be appropriate. Foreseeing inter-country and global trading, the system was built with a set of standards for naming measures and currencies, which would allow any country to adopt the technology, and match commodity for commodity, despite local name variations, measures or other aspects. Further, in recognising the flexibility of the data, the system was designed as a ‘telescopic’ feature, enabling a view on the ‘content’ to come from either a smaller (town/market) or larger (sub-region) perspective, or to come from a commodity perspective (e.g. show me all the contacts, news, offers, prices for white maize...).

A pilot project was established with the International Institute for Communication and Development’s e-commerce project in Ghana in collaboration with Technoserve, focusing on shea butter and shea nuts. The project and software development were privately funded by BusyLab, with development support from the FOODNET project of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). At that time, the FAO had commissioned a study of methods to establish MIS, and this information was used as part of the design study (Ferris and Robbins, 2004). The TRADENET platform was integrated into the national Ugandan MIS in 2004, when CIAT also facilitated the establishment of an additional TRADENET site in Honduras.

TRADENET today

The features

Along with content modules for news, offers, prices, library, contacts... TRADENET allows countries to customise their web pages, by selecting which of these modules they would like to display. It also allows any organisation to combine any number of countries into a 'regional view' – collecting and combining all their content under one common custom interface. Powerful management tools have been developed to allow one organisation to easily manage and manipulate the content and configuration. This has been, in large part, due to the collaboration with USAID's Market Information Systems and Traders' Organizations (MISTOWA) project in West Africa, promoting regional trade between 10 countries.

The countries

TRADENET is currently deployed in Benin, Burkina Faso, Cote d'Ivoire, El Salvador, Ghana, Guinea, Honduras, Mali, Niger, Nigeria, Senegal, Togo and Uganda, and has regional web pages for Central America (www.agroemprendedor.org) and for West Africa (www.wa-agritrade.org). In 2006 TRADENET will add the remaining ECOWAS countries.

The business model

TRADENET is a licensed software platform, and any country representative or group of representatives can license it annually for US\$5,000. This covers the cost of the software, its ongoing development, the servers on which it resides, and all the administration and systems supervision required for uptime-critical systems (such as this application requires). No special equipment, servers or hosting are required by any licensee. The licensee is responsible for data collection, distribution and marketing. BusyLab is responsible for the technology, databases and systems. This clear division of responsibilities is a key aspect of how TRADENET has been conceived, leaving the software developers (BusyLab) to maintain and extend the systems, and the agro-institutions to focus on content acquisition, education and distribution.

TRADENET tomorrow

In 2006, TRADENET will move further into providing a set of tools and services for individual producers and traders, to enable them to act on the information provided by such MIS services. With basic national information service tools in place that should serve the needs of the national statistics or information departments of NGOs or governments, the focus now shifts to enabling farmers or traders themselves, or their associations, to have a set of tools that will enable them to market their goods, contact new markets, advertise their buy-or-sell offers, etc. Storefronts for individual associations, custom-branded pages for associations, with a set of online tools to manage members and distribute information about products, services and events, etc. will be one set of features delivered. Much of the functionality of TRADENET will shift onto the mobile phone platform, allowing an individual or a group to publish news or offers. Through this process, the service will reach out to other categories of traders, or smaller 'trusted circles' of friends and partners.

The TRADENET development team would also like to combine the functionalities of products

like Yahoo Groups for associations, and would like to see more peer-to-peer activity, such as can be found on eBay. With the standardisation of TRADENET and its reach into many countries, we feel it has a unique position to offer trading opportunities via mobile networks, and customised interfaces for individual associations and traders/producers.

Along with these new sets of tools, a new pricing structure will be introduced that will enable fee-for-service payments, through mobiles or by individual subscriptions, avoiding one-fee-per-country obligations.

The broader market for market service applications

Key opportunities

Access to larger markets

One of the key opportunities afforded by these more sophisticated structured applications means that data can be shared and compared between and across regions of the world. This may be as simple as comparing the commodity *sim sim* in Uganda with *sesame* in Ghana. But as regional variations in language and categorisation can prevent users creating simple comparisons, so these relational databases can be structured in such a way that they link local names, local currencies and local measures and grades to standard definitions. Thus anyone in their own market wishing to compare something in another market will need to use the standardised index to be able to convert items into their own language. Such mappings will depend on standard definitions, which are woefully lacking in the African marketing context at this time. Very simply, what is a list of commodities, and how can they be compared? How can you compare commodities that are different in size, in weight, in quality? How can you compare something that is local or imported? Organic or not?

Better information about market trends

If data storage is designed correctly and 'normalised' (part of the design of a relational database), then computers can access the data in ever more powerful ways and present the data in insightful ways: comparing markets, trends, and predicting perhaps what may happen over the coming seasons (based on certain algorithms). Simply seeing price trends over time in Excel worksheets can be interesting, but difficult to manipulate if you want users to change some of the elements considered. Web-based charting can now enable analysts to compare any number of items in any number of currencies, over any period. Comparing price trends, as crops come to maturity, with what has happened over the past few years may give certain institutions powerful insights into how these price trends may vary in the future. This 'data mining' is dependent on well designed databases and a thorough needs analysis of how the data will be used.

More sales opportunities and fewer intermediaries

As ICT tools become more transparent and easier to understand, it is wholly expected that users will increasingly use these tools to market their goods and services. This may be a larger producer advertising its goods on a web page for international traders and purchasers, or simply a smallholder texting a 'circle of friends' that their crop is ready for harvest and advertising a price. There is likely to be some disintermediation of traditional trading practices.

The question of information utility is key in this context, and with the provision of a better information system, service providers should work with farmers' groups and associations to build their knowledge of how to understand and use this information. This can be done through training for local producers in collectively marketing their goods, using information to understand and target ever-increasing national and regional traders, and producing appropriate information about those goods and services online and on the mobile networks.

Sustainable market information systems

As market services and information begin to make a difference to the incomes of different categories of producers and traders, it should become self-evident that these services have value and can be paid for. As such, the market services could develop fees for service and use the new technologies to provide ways for collection and payment. For example, currently when some traders access prices on their mobiles, they pay a premium rate for that SMS and the extra revenue is shared between the mobile operator and the content provider. That concept can be studied and extended, so that a whole range of services, such as offers to buy and sell, or premium information, can be paid for by farmers or their representatives, by deducting micro-payments from their prepaid mobile account cards.

Any number of new opportunities for mobile commerce will be developed over the next 10 years, and there is no reason why these market services cannot be a leading example of how to use those networks to gather income to pay for the services. For us, this is a leading research issue that could be addressed by an organisation such as CTA.

Wealth creation

Needless to say - and it is not in the scope of this paper to address these issues - with better information farmers and traders will make better and more informed decisions. Markets will become more transparent, and new commercial relationships can be created. As markets, particularly international markets, become more competitive, African counties should seek to exploit their regional trade markets more effectively, and in many cases also their national markets. Increasing market efficiency will lead to wealth creation, and that must be the key focus and key opportunity that these market service applications offer.

Better preparation for export markets

With increasingly stringent requirements by the EU and other importing bodies, ACP farmers will increasingly be required to participate in systems that track and trace produce for export. This will probably be done by larger nuclear farms working in conjunction with smallholders. But new information tools must be developed that allow produce to be tracked appropriately to meet import regulations. Identifying where a crop comes from, where it is located by GIS technologies on a map, the quantity available, and what chemicals have been used, will increasingly be the responsibility of any potential supplier and exporter. Tying this into wider market service applications will enable this information to be standardised and available online to any potential buyer worldwide.

Better market positioning through collaboration

Being able to get your message out further and faster, to use these new technologies to market

your goods, and to make direct offers to sell and buy, will require that farmers collaborate to obtain the relevant training, gain access to the technologies and combine harvests to reach bulk pricing and meaningful use of the new communication opportunities. Thus groups and associations will have a new role in assisting farmers to develop their skills and perhaps acting as a proxy for them, again especially through training users and clients in how to integrate new technologies into their businesses and use these information and trading tools to better manage their associations.

Key challenges

Consensus-building

As mentioned above, one key requirement for standardising data across networks and databases is to enable different systems to recognise commonalities and enable users to know they are acting on similar items, grades and measures. This must be accomplished by the participants, who are building current MIS databases, joining together and establishing a common set of standards, to enable data-matching and sharing. A simple list of commodities is not available, either from FAO or from any other online resource. Yet *de facto*, each MIS must define its commodities. Rather than having several lists, and making matching a process that can be difficult, time-consuming and prone to error, there needs to be a concerted effort by CTA, or some other respected body, to issue a standardised set of commodities (taking into consideration weight, size, origin and other characteristics) so that the systems can be interoperable. This will enable many different systems to arise, and allow users to compare information easily across markets.

Editorialising content

Early on, it has been recognised that simply offering basic data is not enough. Moreover, it can have a distorting effect upon the market. All information that is delivered must be packaged in such a way that it is explained. Transport costs, grades and quality are all essential to understanding a market price. This can be accomplished through partnering with radio stations to issue news reports along with simple prices. It can also be achieved through the active participation of farmers' groups and associations. All MIS should be designed with this in mind and should accommodate news commentary to be placed alongside the raw data.

Localising content

Content targeted for communities that perhaps have little access to new technologies, have high illiteracy rates, and use local languages, must be customised to accommodate those communities, otherwise they may be further marginalised. Programmes should be put in place whereby local proxies (farmers' groups, extension officers, even cybercafé managers) can print out market reports that use graphical symbols as well as words for price information, and can be distributed via traditional methods (on market news boards, blackboards, etc.).

Understanding target markets

With so many stakeholders involved in MIS (government departments, analysts, researchers, farmers, traders, NGOs, etc.), it is absolutely crucial that MIS avoids the common mistake in technology development, which is to create a large portal that is everything to everybody and, in

the end, meaningless or too complicated for any one stakeholder. It is unlikely that farmers would want historical data going back 20 years (in some cases, the most they may want is the price this time last year), yet many MIS supposedly for farmers will incorporate sophisticated mapping and graphing systems for historical analysis. Research shows that technology is driven by the users, and on the web it will be the NGOs, analysts and largest traders who will use these systems and thus define the priorities. If these MIS are truly designed for smallholders, the developers must be ruthlessly focused on what those smallholders want, and how they may honestly access that content. It is too easy to be seduced by new technologies of mailing lists, event planners, GIS mapping and more, when the focus should be on whatever it is that the smallholder is requesting.

Understanding the software development process

Software development is a process and should be understood by various participants, so that they can interact most effectively in that process. A proper needs analysis, an extensive functional specification, a detailed technical specification are all required for good planning and a sturdy product. Too often this development process is done *ad hoc*, where people think a certain type of content or feature can be added as they go. This causes systems to be built in such a way that the code is not easily maintainable or extensible, and generally will require the product to be started from scratch again every 4 years or so. Taking some time to understand how software is built may enable people to be more successful in the long term in their attempts at intervention.

Avoiding revolutionary approaches

I would argue that all human involvement with technology should be seen as evolutionary and not revolutionary, especially in the light of the target audiences for MIS. The intervention of technology into a business/commercial process that has essentially remained unchanged for hundreds of years must be of benefit to, and improve, that tradition, not try and replace it. As such, traditional systems of barter and credit should somehow be supported and enhanced by the technology, not replaced. A good analysis of how this occurs, and how low-tech intervention can provably play a significant role in assisting traditional practices, will build enthusiasm for the new technologies and enable participants to adopt them more easily.

Involving the private sector to own and pay for services

If the value of these MIS can be demonstrated to the participants, then a strong argument can be made to the effect that some percentage of that otherwise-unrealised value can be contributed for the renewal of these services. The challenge all along has been that these services make marginal contributions; perhaps more importantly, no system of fee collection and administration is viable or affordable. Both these assumptions will change with the new MIS offerings. Real value can be demonstrated and arguments made for participants to contribute. And with the distribution and penetration of new mobile networks, micro-payment options are now possible without involving a large (or any) network of payment points. Already, some countries are passing off the cost of the service by making SMS requests a premium rate. That same concept can be extended further as the content itself is differentiated and becomes more valuable. Further, new forms of mobile commerce will enable stakeholders to pay for and maintain subscriptions to services via mobile payments from pre-paid cards. Finally, with the growth in distribution of the content, and further targeting to specialised and differentiated markets, advertisers may be more likely to sponsor that content, providing another avenue of potential revenue.

Shared branding

Presumably, content will become increasingly complicated. The source of the content will be shared, as more people are more easily able to submit content. The value of the content will become differentiated. Ownership of that content will become more important, so branding will be key and some level of auditing and accounting for any revenues earned from that content will be required. Finally, access to content may be limited, based on affiliation and subscription. Arguably, all MIS should consider this in initial planning and be prepared to brand content on the site and allow private areas and public areas, and use their powers to define where some content is free and some premium.

Collaboration with media outlets

To distribute the content in these ACP markets, mobile and radio networks will be the most promising delivery methods in the near future. The owners and managers of those networks must be involved early on in the design and implementation of these systems, as their networks will carry the content. Government can play a key role in lobbying and legislating for a certain degree of public access to these networks for services such as MIS. But shared business models and value creation for all stakeholders will be a more plausible and longer-lasting foundation on which to build participation and collaboration.

Conclusions

In the past 2 years of developing TRADENET, we have learned many lessons and gained the support of many partners from research and development. It is clear that there is considerable demand for better MIS, and also a real need for reliable and flexible technologies to support such services. However, as demonstrated here, developing the right product for multiple end-users, such as those from government, donors and NGOs, who often pay for such services, and also providing effective wealth-supporting services to a spectrum of large- and small-scale traders and farmers, is a challenge. We believe the service must be standardised; it should meet the needs of the clients, providing different portals for different types of user. Information needs to be packaged in a way that clients can use and, for the millions of atomised smallholders, training and promotion are critical to the appropriate use of new technologies. Other challenges still remain. Although mobile phones are rapidly becoming essential trading tools for the more organised farmers, many millions of farmers still rely on receiving their information through radio; in the future, these more traditional services need to be supported through innovative business arrangements. The goal of TRADENET is to be a leading software product that can be supported, used and adapted by many various agencies and private-sector organisations in developing countries, to the benefit of many millions of smallholder farmers and for the fostering of more efficient agricultural trade.

References

- Ferris, R.S.B and Robbins, P. 2004. *Developing Marketing Information Services in Eastern Africa, the FOODNET Experience in establishing Local, National and Regional MIS*. Commodity Marketing Information Services.

MANOBI: increasing the incomes and life quality of farmers in Senegal through a multimedia mobile phone MIS

Daniel Annerose (Manobi, Senegal)

New communication and information technologies in the African rural sector

Most of Africa's population (70%) live in rural areas. An important part of this population depend, directly or indirectly, on incomes from agriculture, fishing or animal breeding. Globalisation of the economy and of trade has markedly affected much African agriculture, which was not prepared for these developments because it had been supported for a long time by the State. The situation of poverty seen in both rural areas and suburbs bears witness to the difficulty of reintegrating rural populations in their markets and in their local, national and international economy.

What part can the new technologies play in these circumstances to significantly improve the economic situation in these sectors? What approaches should be implemented to develop really helpful uses? What economic models can support those strategies and produce sustainable effects for the beneficiaries? Like most general services, such as water, energy and the communication infrastructures, the new communication and information technologies are considered as a priority for urban areas, whereas rural areas have little or no provision. Can this natural tendency be reversed, and through what mechanisms? Few answers to these questions are available today for the African rural populations due to a lack of pedagogical models to inspire their construction.

Manobi, a multimedia service operator for agribusiness and the rural sector, was created with a view to participating in the construction of these models. The object of the case study briefly described here is to show how solutions based on the exploitation of new communication and information technologies can contribute directly to the development of rural populations and their environment.

The multimedia MIS case study

Methodology

In Senegal, one of the main problems of producers and of middlemen (*banas-banas*) is the absence of reliable information on the situation of their products' destination markets. The product price is generally announced by word of mouth, and constitutes the main bone of contention between these two players. On one side, the *banas-banas* used to leave the market to go and get their supplies with some information already distorted when they arrived at the producer's. On the other hand, the producers, who only went to the market from time to time to check the actual price of their products, could not but doubt the sincerity of the *banas-banas*.

Manobi has developed the T2M, a system that enables both groups to use their mobile phones in order to know in real time both the price and arrival status of their products at the markets, and the availability of the same products in the production sites. The prices and arrival changes of products on the markets are collected twice a day. The data, which are sent to and held at a centralised base, are analysed in real time before they are broadcast to users through a multi-modal platform (WAP, SMS, voice XML, mobile and fixed Internet) specially developed by Manobi to provide value-added data services at lower cost with the mobile telephony operators' first-generation classical vocal networks. With this system, the Senegalese producers and *banas-banas* were the first WAP users in Senegal – something they mastered in a few days, even though the majority are illiterate and had never used the telephone before.

Results

The impact of this service was assessed on a sample of 50 producers and 15 *banas-banas* in the four-month horticultural campaign.

Improvement of income

The main result noted is a significant increase in users' income compared with those of previous campaigns. The producers immediately found a sale price for their products corresponding to the actual market prices. Because they could better seize the market opportunities with better information on the producers' offers, the *banas-banas* reduced their charges and sold their stocks more easily.

The service cost for the user corresponds to a telephone communication per day: CFA F200 per minute.

Thanks to this service, the group of producers studied increased their income on average by 15% after they had deducted the service access fees. In the 316 ha cultivated, there was a CFA F114 million (€174,000) increase, that is an average increase of CFA F361,284 per ha (€50). Calculated on the 8-month horticultural campaign, the net income average increase is CFA F722,500 per ha (€1,100) for a service overall cost of CFA F30,000 (€45).

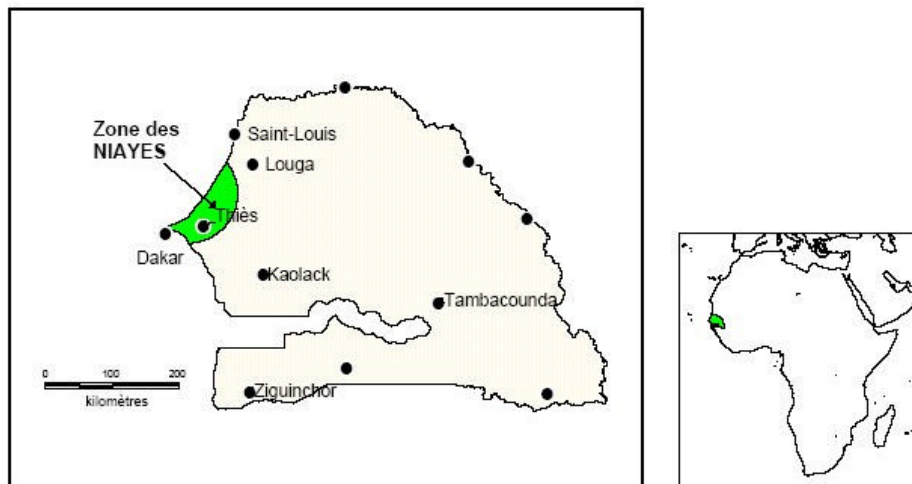
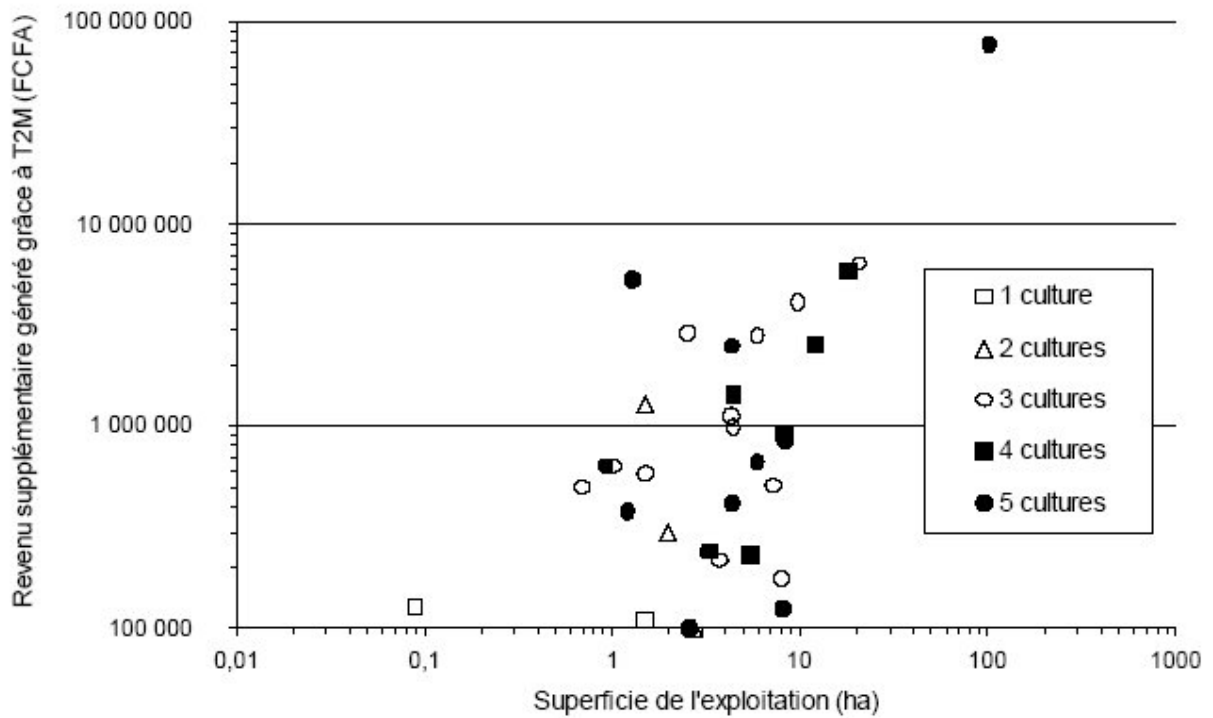
Many different situations were identified from the data: the size of the cultivated area determines the level of additional income generated, and producers with a large variety of crops can better exploit the information provided and generate important margins (Figure 1). Thus a small producer with a 1 ha farm, growing very diversified crops, once he knows the market situation in real time, can make decisions that enable him to increase his income to levels equivalent to, or higher than, those of a producer who works on 10 ha of undiversified crops. This shows that in addition to the true value of the information provided, its economic impact is determined by its use by the receivers.

Other important impacts of the service for beneficiaries were highlighted. They reveal interesting means of promoting innovative uses of new communication and information technologies for the low-income or poor populations.

Better time management

Important time is saved by T2M users, which they can devote to increasing value-generating activities.

Figure 1: Producers with a variety of crops can better exploit the information provided



More rapid negotiations

- For all beneficiaries, the information relayed by Manobi has become a reference. Trade between producers and the *banas-banas* is easier – their work has become more organised and with less conflict, and negotiations are now concluded quickly.

Optimisation of travel time

- Producers no longer leave their farm to go and look for information at the markets. The service enables them to avoid the 2-day trips to the market that they used to make every week, on average, to check the price of their products.

- Because they are confident of the reliability of the information, the *banas-banas* have reduced the time they spend on exploration and have organised to share their trips from production sites to markets.

Presence of producers on their farms

Because of the time saved thanks to this service, producers can spend more time on their farms and better supervise their employees and the family members who help them. This additional time has enabled many of them to:

- increase cultivated areas
- increase yields
- increase the quality of their products.

Better management of means

For the producer

The precision of the data provided by the system is an important tool that helps producers make decisions on:

- choice of priority crops, depending on market demand
- production diversification
- optimisation of the use of fertiliser stocks.

For the *bana-bana*

The T2M system enables the *bana-bana* to localise more rapidly and target precisely the products he needs and the producers who have them:

- trips are optimised
- destination markets are precisely targeted, based on the expected income.

Emergence of new activities

New jobs are also created around this service:

- ‘urban *banas-banas*’ exploit the data to organise urban market-resupply circuits by playing on the price difference of the same product on these markets – they contribute to rebalancing the availability of products on the urban markets
- in the production areas, producers and their professional organisations have entrusted to youths with horticultural education the charge of organising technical follow-up of producers – they act as technician–advisers to help producers derive most benefit from the service by maximising their farm management.

New ambitions, and new economic and social needs

The T2M system has enabled users and, in particular, producers to reintegrate their industry as full players each acknowledged by the others. By reappropriating a recognised role in the industry, they are discovering new ambitions, which we meet through the development of appropriate services. These concern namely:

- development of the sale of their products in the continent, and export to the countries of the North
- putting at their disposal tools to help them pilot their farms
- development of the product quality and traceability needed to develop their labels and the credibility of their origin.

The professional organisations of these producers have realised the changes these services have brought about in their members' behaviour and needs. They demand services that enable them to:

- develop their own management methods
- provide value-added services to their members
- better participate in and master the local development of the area they cover.

A new winning ecosystem

With this experience, we have succeeded in building a winning ecosystem for each participating player:

- **the rural communities**, who are the final users and whose income and living conditions are directly improved
- **the national telephone operator**, which now realises the prospects for developing activities in rural areas
- **Manobi**, which concentrates efficiently on developing uses that meet local needs
- **the equipment makers**, who have a vested interest in developing a new group of customers and providing the corresponding network infrastructure equipment (ex Alcatel).

More natural relationships between the private and public sectors are established. Thanks to this project, supported by the International Development Research Centre (IDRC), new services and new technologies can now be experimented with in conditions that facilitate both better care being taken of users' needs, and the design of viable associated economic models.

Conclusions

This case illustrates how the information technologies can contribute efficiently to the economic and social development of rural populations. For us, three key elements must be considered in order to answer efficiently the questions that currently limit dissemination of these technologies in rural areas.

- **Use versus access.** Identify first of all the uses that correspond to local needs, before promoting access.

- **Services versus technologies.** Design services while taking into account the users' particular situation (level of income, mobility, isolation) and mobilise adapted technologies (fixed, mobile Internet and its different modes) to provide this service in the best conditions for the user.
- **Rural versus urban.** Define realistic economic models for network extension and quality, as well as providing services that strengthen the role of rural communities in their markets, their industries, their economy and their social environment.

These conditions enable us to offer workable new prospects in using information technologies, mainly global systems for mobile communications, and services with high value added for all the players.

RATIN – regional market intelligence network in East and southern Africa¹⁸

Stephen Kiuri Njuria (RATES Project, Kenya)

Overview of RATES

The Regional Agricultural Trade Expansion Support (RATES) Program is a 5-year USAID/REDSO-funded programme implemented by Chemonics International Inc. Its overall goal is to increase the volume and value of agricultural trade within the East and southern Africa region, and between the region and the rest of the world. RATES is a commodity-focused activity and currently supports five commodity value chains, including specialty coffee, maize, cotton and textiles, livestock, and dairy. Through policy advocacy, lobbying, public relations and marketing, RATES is expanding private-sector contributions to regional trade initiatives in East and southern Africa.

Maize in East and southern Africa

In developed economies, most people associate maize with ‘corn-on-the-cob’ dripping with butter, crunchy breakfast cereals, sweetcorn in salads and, for cinema-goers, no movie is complete without popcorn. However, in many African countries maize is associated with food security: ‘where there’s no maize there is no food’. As a result, maize is the major food crop in the region and a key component of national-level food security strategies. Demand for maize in sub-Saharan Africa is expected to double from 27 million MT in 1995 to 52 million MT in 2020 (IFPRI).

However, it is not uncommon for certain parts of the region to be hit by severe seasonal food shortages, despite available maize stocks in nearby countries. The RATES Program undertook some value-chain studies for maize in selected key maize-producing and -consuming countries. The result demonstrates that, on average, the region produces 22,000,000 MT and consumes an estimated 16,000,000 MT, leaving a regional surplus of 4,000,000 MT. With such a huge surplus, why are our people suffering from food insecurity? Is it because we are not integrating our food requirements as a region? Are we denying our neighbouring states access to food, and discouraging larger markets for our farmers? Our conclusions were that the distance between the supply and demand of maize can be measured in terms of both kilometres from supply and the number of cross-border barriers inhibiting trade, plus lack of market information and correct supply-and-demand figures.

To address the regional impediments to cross-trade, the RATES maize programme has the long-term goal of improving the flow of maize and expanding availability within the region, with a view to stabilising the regional maize market and helping to reduce the large swings in maize

¹⁸ The author’s views expressed in this publication do not necessarily reflect the views of Chemonics International, the Agency for International Development, or the US Government.

prices seen during periods of deficit. This goal is anchored on a regional theme of 'maize without borders' as a concept launched by RATES through the auspices of COMESA. This initiative promotes free cross-border trade and regional harmonisation of maize policies, and been adopted as a COMESA policy to increase inter-regional trade in grain.

Trade links and market information

To address the challenges of managing 'real-time' market information and trade-links sites, the RATES Trade Office (RTO), dedicated to the upkeep and management of both the www.ratin.net and www.tradeafrica.biz sites, was opened in 2003. This office serves as the RATES 'call centre', where trade inquiries are proactively pursued through the Internet, e-mail, telephone, SMS and radio. All site 'hits' and trade inquiries are monitored and tracked for transactional viability and completion. The RTO maintains an extensive trade directory of private companies and public-sector agencies connected to the maize, bean and pulse trade.

RATIN

The Regional Agricultural Trade Intelligence Network (RATIN, www.ratin.net) is a market information platform within the RATES Program that provides timely, accurate and relevant market information to people across the agricultural sector, including cross-border traders, processors and policy-makers. The selected commodities are maize, beans and rice, and the focus is on Kenya, Uganda, Tanzania and Rwanda.

The information provided includes:

- daily, weekly and monthly wholesale prices for selected terminal markets in East Africa
- maize import parity prices for selected border and import points
- monthly regional trade analysis in the form of a monthly food and trade bulletin
- trade opportunities forecasts based on the regional production and inter-regional trade flows
- provision of the estimated regional maize availability balance sheet.

This information is disseminated through web, e-mail and posted mailings.

This trade links site continues to draw interest from the private sector, with inquiries to buy maize closing the year 2005 at US\$162.7 million for the year, representing 845,290 metric tons of grain. This is about a 20% increase on 2004. Offers to sell closed at US\$118 million, representing 724,000 metric tons. The www.tradeafrica.biz site is used for both domestic and regional transactions; hence the totals far exceed the volume of formal regional trade for the year.

Figure 1: TradeAfrica.biz



Figure 2: RATES trade network



The RATES Program has pushed the envelope on developing strategies for increasing grain trade within the region. The region has had some initial success in increasing inter-regional trade, in that formal maize trade increased this year from US\$31,252,068 to US\$47,476,232, and government policy-makers are beginning to change their attitudes towards the free movement of grain across their borders. The COMESA and East African Community (EAC) heads of state have endorsed the ‘maize without borders’ concept, which aims to improve the smooth flow of maize from surplus to deficit areas. Here are some examples of how the trade worked in the year 2004-05.

- Zambia and Tanzania remained key maize trade players in 2004, with US\$15,929,552 and US\$14,959,948 in formal trade export value, respectively.
- Most of Tanzania’s trade flowed north as Kenya’s main supplier (US\$6 million) and west to Burundi and Rwanda (combined total of US\$7 million).
- Uganda exported a significant amount of maize, with a value of US\$6,403,000 (up from US\$4,359,000 last year), but shifted its focus from Kenya – its traditional trade partner – to Burundi and Rwanda. This may be related to World Food Program food-aid shipments to those countries, which are recorded as formal trade.
- Ethiopia has come on the scene this year for the first time as a net supplier (although still limited) of maize to the region and the Middle East. Trade valued at US\$1,662,000 is significantly higher than previous years’ trade, valued at US\$48,000 in 2003 and US\$318,000 in 2002.
- Malawi, although considered to be a perennial maize-deficit country, followed Tanzania and Zambia as the third-largest maize-trading country at slightly over US\$7 million. Following the concept of ‘maize without borders’, Malawi traded freely with countries such as Zambia (US\$4.5 million) and Mozambique (US\$1.3 million), which are the same countries from which it procured maize between harvests. As a prime example demonstrating that trade bans are unnecessary, Zambia sold maize to Malawi valued at US\$6.6 million.
- There are several examples of maize import *and* export trade occurring between the same countries, supporting the RATES premise that free regional trade in maize is the best form of food security – every country has a different harvest season. The best examples are Kenya and Uganda, which bought and sold maize with Tanzania; and Malawi, which bought and sold maize with Zambia. The challenge for RATES is to convince the public sector and food-security operations that free trade is part of the process of maintaining and sustaining increased trade in the region that allows maize to flow freely from areas of surplus to areas of deficit.
- Of significant importance is the comparison of informal (unrecorded) maize trade with recorded formal trade. Taking into consideration that informal trade is only partially monitored, and values are conservatively estimated, total informal trade for 2004-05 exceeds US\$44 million – almost equal to the US\$47 million formally recorded by COMESA. The informal trade between Uganda and Kenya is almost US\$14 million, compared with recorded trade of US\$400,000.

Inter-regional grain trading has increased at various stages in the value chain. At the national level, a number of interesting initiatives are being explored, including contract farming schemes, forward contracting, warehouse receipt systems, and commodity exchange systems. All these efforts are prerequisites for establishing a more advanced system of regional trading. However, the pace of moving to a more liberalised environment has been somewhat slow, and these ‘new’

initiatives have not produced a formidable grain-trading platform. This slow pace has been hindered somewhat by government interventions (government participation in the market place), lack of capacity among private-sector players to fill the vacuum left by government marketing boards, and a lack of regionally focused distribution channels of grains from surplus to deficit areas. As a result, regional trading is still hampered by the dynamics of the past, where market principles and practices were monopolised by the state.

The absence of a well organised regional food-grain market constrains broad participation by genuine and reputable grain traders, slows adoption of productivity-enhancing technologies at the farmer level, and generally leaves the grain value chain exposed to price and quantity volatility risks. For the trade to move forward, market participation requires:

- broad regional participation – sufficient buyers and sellers in the regional market so that a single player cannot hold others to ‘ransom’
- rules of trade – qualification of buyers or sellers, and guidelines for orderly markets
- transparency offers and bids in the regional market are known to all potential buyers and sellers
- regional market intelligence – offers and bids in one area or country are known in other areas or countries in real time, so that trading between countries is facilitated
- knowledge sharing – information on the underlying regional supply, including food aid imports, and demand fundamentals.

Regional grain-trader summit, Nairobi; 12- 13 October 2005

RATES, in collaboration with COMESA and the EAC, held the first regional grain-trade summit to provide a forum for all key players in the regional grain industry to meet as a group (for the first time) to map out a regionally focused strategy for grain-trade market development within COMESA. Participants included key policy-makers, leading food-aid policy-makers and procurement staff, leaders of strategic grain reserves, private traders, producers, millers, bankers and donors. The event attracted over 300 participants from 20 countries, including COMESA, EAC and the Southern African Development Community (SADC), as well as Europe and the USA.

RATES is addressing trade-improvement issues head on through our ‘maize without borders’ initiative, and felt that the timing was right for the region to further develop strategies that encourage the development of a mature grain-trading system. To do this, the region needed to develop consensus on the right way forward among the commercial players in the value chain. In this regard, the regional grain-trade summit accomplished this objective. The theme ‘the future of grain trade in East and southern Africa’ formed the basis for all presentations and workshops. The four main topics that segregated the key summit presentations and workshop discussions were:

- public, private and donor sector investment/intervention options
- role of food aid and national grain reserves, and their impact on trade
- competitiveness – farm to market systems
- trade finance – collateral management, commodity exchange, and warehouse receipts.

Structured grain-trading system in East and southern Africa

The grain-trade summit concluded with a general objective of creating a structured trading system that will help foster the growth of regional agricultural trade, by creating a larger market for our farmers and other industry players along the value chain. The building blocks of such a system were identified as follows:

- clean and identifiable storage facilities
- aggregation of volume, especially from small-scale farmers
- standards and grading, use of recognised, e.g. East Africa maize standards
- contract-enforcement system
- legal and regulatory environment
- finance (role of banks)
- commodity exchange
- integrity.

To start the process of building a structured grain-trading system, the RATES Program has incorporated stakeholders actively engaged in structured trade systems in warehouse receipts and commodity-exchange initiatives, targeting collateral management firms, banks, trade associations and existing parastatal marketing agencies. One such group in Kenya, through the auspices of RATES and the Kenya Maize Development Program, a bilateral mission project, is actively pursuing the formation of a regional grain council (East Africa Grain Council). The Grain Council's objectives are envisaged as follows:

- promote a well functioning regional supply chain, focusing on trade issues of all sectors of the value chain, building a platform for reducing constraints in regional grain trade
- build cooperation, interaction, partnerships, alliances, networks and market links
- collect market data, generate information exchange and share regional expertise
- promote investment in structured marketing systems, including warehouse receipts and commodity exchanges
- act as main licence and certification authority in structured systems, and provide commercial services as needed
- recognise and support accepted principles of international codes of corporate conduct
- facilitate awareness of new technologies
- represent the regional membership at national, regional and international forums, and lead advocacy and lobbying actions for best interests of council members.

In Malawi, RATES is bringing together all grain industry workers with a view of forming a strong grain industry association with similar objectives to those of the East Africa Grain Council. In addition to promoting formation of the council, RATES is working closely with the East Africa community - Kenya, Uganda and Tanzania (EAC) and COMESA - to produce handbooks on import and export regulation requirements, targeting small- and medium-scale

traders as well as government officials stationed at border posts. For example, a guide for maize traders on regulatory requirements for imports and exports of maize has been printed through the auspices of EAC and the respective revenue authorities of Kenya, Tanzania and Uganda. The publication and distribution has been followed by a training and promotion programme targeting traders' associations and customs officials at the Kenya/Uganda borders, and at the Tanzania/Kenya border points. These regulations are also posted on the RATIN and tradeafrica.biz websites.

We believe a structured trading system will bring benefits such as:

- price information to all participants – accurate, timely, public and readily available
- uniform, regulated, and impartial system – acceptable code of conduct
- market transparency – offers and bids are known by all participants
- reduces seasonal spot market prices volatility – offers opportunity to manage your risks
- increases the regions' money supply – bring liquidity to the grain market.

The above benefits will be realised by farmers, traders, brokers, millers, banks, service providers and food-aid agencies.

In conclusion, the RATES Program's efforts of promoting regional trade integration will lead to food security and economic growth to more than over 374 million people who live within COMESA, by addressing impediments to trade and improving market information flow to traders, farmers and policy-makers.

The Caribbean Agribusiness Marketing Intelligence and Development Network

Ardon Iton (CARDI, Trinidad & Tobago)

The Caribbean Agribusiness Marketing Intelligence and Development (CAMID) network was established under the aegis of the Caribbean Agricultural Research and Development Institute (CARDI) in May 2001. CAMID is a marketing intelligence network that aims to support marketing development in the region. The members of CAMID include national and regional, public- and private-sector agribusiness entities that have a responsibility for the provision of marketing development services to the agribusiness sector in the Caribbean CARICOM countries.

The network is directed by a regional management committee comprising representatives from national and regional, public- and private-sector organisations, while day-to-day management is carried out by the secretariat located at CARDI headquarters in Trinidad and Tobago. CAMID has developed a regional integrated marketing development strategy (RIMS) designed to solve the fundamental problems with respect to increased information flows between sellers and buyers, facilitation of product exchange and reduction of transaction costs.

The RIMS aims to establish systems, mechanisms and arrangements that will allow the integration of major services, including marketing intelligence, trade facilitation, quality assurance and the supporting infrastructure.

Specifically, producers and traders will benefit from the following support services:

- a product supply-and-demand forecast service
- e-commerce trading facility
- agribusiness database
- freight availability database
- export marketing information service
- industry and enterprise development services.

The pack-houses and agro-processors in each country will be the nerve centre of the RIMS. The market intelligence network will assist them to enhance their ability to find markets, co-ordinate production, organise shipping and deliver products to customers' specifications in the domestic, regional and international markets. In addition, these pack-houses/processors could work together in undertaking a joint export-marketing programme.

The forecasting mechanism, the e-commerce facility, the agribusiness database and the transportation database will be accessible through the CAMID website. These and other services will be delivered as follows.

The **product supply forecasting mechanism** will allow for information to be available on the future product supply situation at regional, country, sub-district and individual farmer levels. On a monthly basis, farmers will be required to complete or provide information to CAMID coordinators for the completion of rolling 3-month forecasts of their production, on the condition that they will be assisted in finding markets for their products. Domestic buyers in each CAMID country can access the database and will be able to search for suppliers of a product in a particular area, or in the whole country, who can supply products within a particular period. Buyers who do not have access to a computer will be able to contact central locations by phone for such information. The forecasting software will not allow buyers and sellers to conduct sales transactions via the computer, as this will be available via the e-commerce service.

The CAMID secretariat will also develop a **demand-forecast model** which will utilise historical data and surveys of selected buyers to forecast demand, thus allowing for forecast of both demand and supply.

The **e-commerce trading facility** will allow for communication between buyers and sellers via the computer. Sellers including pack-houses, processors and importers will be able to post onto the site products that they have for sale. Domestic and global buyers, such as wholesalers, hotels, supermarkets, restaurants and exporters, will be able to browse and select products offered by sellers and advertise their requirements online for the attention of sellers.

The **agribusiness database** will allow authorised members, nationally and regionally, to store and retrieve data on a commodity basis with respect to all aspects of agribusiness. Information will be available on a product-specific basis in discrete marketable units. Research undertaken has shown that, to be most effective, the products purchased by public and private sectors should be available as marketable units. They include: industry profiles, market profiles, trade statistics, commodity profiles, production trends, investment profiles, supplier-and-buyer profiles, post-harvest technology packages, production technology packages, processing technology packages, current market prices, price trends, market opportunities, supply forecast, sources of inputs, trade agreements, source of funding, government policies, support agencies, industry news and events, and short-term training.

The service will allow for a database administrator who will manage the database in terms of:

- ensuring the various information products meet requisite standards for publication
- controlling access to the database by national and regional users
- setting prices for information product/package
- authorising other personnel who will be able to place data and information on the database from different locations in order to increase the efficiency and range of information.

Each country or organisation will have the ability to control access to their own database and to market their discrete products as listed above.

The **freight-availability database** will be accessible via the CAMID website. It will allow providers of air, sea and land freight services in the region to post details of their services in terms of up-to-date schedules and rates. The software will allow authorised traders to access the database to find the most appropriate transport solutions.

The **extra-regional joint marketing programme** provides information and a forum that facilitates contact and dialogue between exporters and importers of Caribbean food products, and is aimed primarily at increasing members' competitiveness and market share in extra-regional markets through joint action, as it relates to:

- identification and negotiation for purchasing contracts with buyers
- consolidation of products to satisfy volume requirements of large buyers
- consolidation of financial resources to promote products jointly
- consolidation of procurement efforts to reduce unit costs
- sharing of information to reduce costs
- joint negotiation for freight space and rates
- joint negotiation for development assistance
- stronger lobbying voice with respect to government policy.

In the execution of this programme, CAMID will supply information to the Caribbean Agribusiness Association (CABA) and other exporters.

The **industry and enterprise development service** is a consultancy service aimed at facilitating the development of commodity/industry associations and individual business enterprises through the execution of industry, business and market studies, preparation of industry, business and marketing plans, and the undertaking of product development projects on behalf of individual members, firms and industries. The development of industry associations, which is the main responsibility of CABA, is regarded as a major prerequisite for effective collection of agricultural production data.

The RIMS has been presented to stakeholders at a number of forums at national, regional and international levels, and has won strong support from the regional public and private sector, including:

- CTA, which has been a major source of financial support
- the Ministers of Agriculture of the region [communiqué from the June 2002 meeting of the Alliance for Sustainable Development of Agriculture and the Rural Milieu (the Alliance)]
- Council for Trade and Economic Development (communiqué from its May 2002 meeting)
- CABA
- Marketing boards across the region
- Ministry of Agriculture marketing units from across the region
- IICA (communiqué from the June 2002 meeting of the alliance)
- FAO
- The Committee of Lead Agencies of the RTP.

The CAMID network, through CARDI's marketing development programme, is regarded among major public and private sector stakeholders at the national and regional level as the marketing intelligence system for leading the regional approach to agricultural marketing development in CARICOM.

Challenges

The establishment of the network has experienced initial problems, as with any other entity in a developing country. These problems span the spectrum from institutional identity to technical difficulties. The following are some of the more difficult problems encountered.

- Agreement on institutional arrangements – protracted and sometimes acrimonious discussions as to whether the network's management should be under the direct control of CARDI or whether it should be an autonomous entity. It was finally agreed, following ministerial intervention, that it should be a marketing intelligence system under the management of CARDI.
- Some reservations on the confidentiality of the data supplied to the network. As a result of this, the software was designed so that each country and organisation would have 'password' control over their information.
- Wide variability in type of data collected and the data-collection instrument, particularly with respect to production forecast. Standard data-collection instruments for production forecast and for industry profiles have been designed and generally agreed on by member countries.
- Frequent staff movement in the Ministry of Agriculture. Significant delays have occurred in implementation at the national level, due to the transfer or resignation of persons selected as national co-ordinators.
- Software modifications to meet the required level of flexibility and user-friendliness required.
- Reluctance of the agricultural extension service to undertake the collection of production forecast data. The extension service, in many countries, holds that the collection of marketing information is the responsibility of agricultural marketing agencies, and their function is to provide production-related services. The marketing agencies, however, do not have an adequate number of officers to cover the required number of products and geographical area. The solution lies in the development of industry/commodity associations, improved marketing planning and better communication between buyers and farmers, including increased use of telephones and radio programmes.

Achievements

Notwithstanding the difficulties encountered, significant progress has been made in several areas, as outlined below.

Institutional arrangements

A regional management committee, comprising public- and private-sector stakeholders, has been established, and a draft memorandum of understanding defining how the network will operate has been developed by the CARICOM secretariat. The final draft of the memorandum of understanding is now being circulated to CAMID members and to the permanent secretaries in the Ministry of Agriculture, which will be finalised by the regional management committee and permanent secretaries in mid-December 2005.

The day-to-day management of the network is currently carried out by a team of three part-time persons: a regional co-ordinator, a database administrator and an administrative assistant. National co-ordinators for the network as a whole, as well as for the agribusiness planning database and the product-supply forecast service, have been established in 13 countries.

Information service development

Planning database service

The agribusiness planning database, which was initially developed with funding from CTA, has been redesigned following review and testing of the software by 11 member states. The new database will function as a regional repository and search engine for all types of information relevant to the agribusiness sector in CARICOM. This new design is now in the process of being tested by stakeholders in the region, and is expected to be fully operational by the end of February 2006. The review, testing, redesigns and initial population of the database are being financed by FAO.

Product-supply forecast software

Through partial funding from USAID and a joint venture agreement with a private-sector information technology company, Integrated Trade Solutions in Barbados, the network has developed Internet-based software to support the forecasting of primary produce production. Through funding from FAO, national meetings of public and private agribusiness stakeholders in 13 CARICOM countries have been informed about the rationale, benefits and *modus operandi* of the product-supply forecast software, co-ordinators from 11 countries have been trained in its use, and 10 countries have developed implementation plans. Final arrangements for its implementation at the national and regional level are expected to be arrived at during a meeting of permanent secretaries and heads of the national marketing agencies in mid-December 2005.

Enterprise and industry development (consultancy) service

The staff of the network secretariat have undertaken a number of consultancy projects under the enterprise and industry development component of the RIMS. These include:

- market evaluation and marketing strategy for West Indian cherry-based fruit juices
- market analysis and strategy for cassava products from Montserrat
- study of the beef market in Trinidad and Tobago, and opportunities for the Jamaican beef industry in Trinidad and Tobago

- analysis and strategic plan for the hot pepper industry in the Caribbean
- strategic plan for the establishment of a national export services facility in Trinidad and Tobago
- strategic and development plans for the Caribbean craft industry in Dominica
- agribusiness development plan for the government of Trinidad and Tobago
- market analysis and strategy for the rabbit industry in Trinidad and Tobago
- feasibility of a dried fruit and vegetable industry in Trinidad and Tobago
- co-ordination of analysis and policy framework development for the organic industry in the Caribbean
- business analysis and establishment of marketing information system for Black Bay farmers' association in St Lucia
- marketing development plan for the hot pepper industry in the Caribbean
- agricultural development plan for the Goldsborough and Hillsborough districts in Tobago
- analysis of the opportunities for the essential oils industry in Trinidad and Tobago
- strategic framework for development of the agribusiness sector in OECS.

Joint export marketing programme

The strategic framework for the implementation of this programme has been prepared. The strategy calls for the establishment of Caribbean food-buyers' associations (importers/ethnic shops/restaurants) in major cities in the Caribbean, North America, Europe and Asia, and the establishment of information-sharing agreements with the CAMID network. Through the CARICOM secretariat, CAMID has initiated action with the Caribbean American chamber of commerce in New York and the Southern Diaspora Research and Development Centre (SDRDC). Through this initiative, a draft memorandum of agreement has been prepared between CAMID and the southern caucus of NGOs for sustainable development and its regional centre in North America, Latin America, Africa, Asia and the Caribbean. Under this agreement, the SDRDC, based in New York, will function as CAMID's arm in the north-eastern USA. The agreement also covers a mechanism for sourcing funds for investment, in marketing development projects, as well as in regional agricultural production, food-processing and agro-tourism ventures. Progress towards the establishment of the New York Caribbean Restaurant Association is also being made.

CAMID will partner with CABA, which is expected to take the lead in the joint marketing programme, in the further development of this initiative.

The CAMID secretariat has also partnered with Integrated Trade Solutions in the development of **e-commerce software**, which will be an integral part of the joint marketing programme.

Financing

Since its official launch in May 2001 the network has been able to finance its operation through donor funding, which has amounted to US\$457,000; consultancies, which have generated income of US\$194,000; and in-kind support from CARDI, in the form of office facilities and the financial administration of donor funds.

From very early in CAMID's conceptualisation/development, CTA has been a major contributor. To date, the network has received just over €2,000 from CTA. Donor funding for the network has also been received from FAO, USAID and IICA.

Future strategy

Programme

The new focus of the network will be to become an agribusiness information centre, which will establish and strengthen relationships with public- and private-sector marketing information organisations, regionally and internationally. The main functions of the network will be co-ordination of:

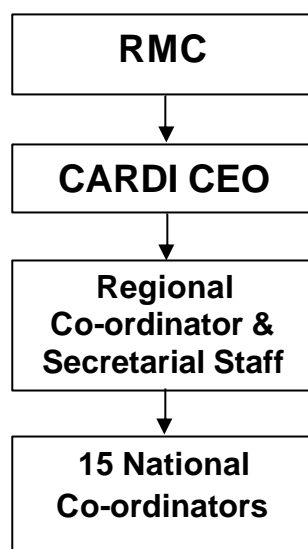
- a market demand and supply forecast service
- the regional agribusiness planning database service
- a regional freight availability database service
- a quality assurance database.

A significant amount of work remains to be done in facilitating the establishment and/or development of producer and buyer organisations, which are prerequisites for efficient and reliable data collection within and outside the region. In this regard, the network will need to work more closely with private sector bodies such as CABA and supermarket, hotel, restaurant, exporters' and agro-processors' associations within and outside the Caribbean. Given that the members of these organisations are the main sources of reliable marketing information, a memorandum of understanding will have to be established with them, particularly as it relates to information sharing and how such information will be used.

Organisational structure

The secretariat will be managed within CARDI via the organisational structure shown in Figure 1.

Figure 1: CARDI organisational structure



The national co-ordinators will ensure the effective functioning of the national components of the network's programmes and provide support to network projects.

Financing and sustainability

It is recognised that the network must be partly self-financing in the longer term, through the sale of services. Over the next 2–3 years, as it builds its capacity to deliver its services, it will require additional development support. In the longer term, the network proposes to finance its operations through the following mechanisms.

- **Government.** In each country, government is expected to assign one full-time staff member, either from the agricultural marketing development agency or from the ministry of agriculture, to function as the national network co-ordinator and assist with the operational costs of running the network.
- **Fees from use of forecasting software.** Buyers including packing houses, processors, exporters, importers, wholesalers and retailers would be required to pay for use of the software and access to the non-proprietary component of the information on the database.
- **Fees from access to the planning database.** Regular users of the database will be required to pay an annual subscription to access all of, or components of, the database. Less regular users will be required to pay for specific information.
- **Fees from use of the freight database.** Users of the database will be required to pay an annual subscription fee.
- **Funding from development agencies.** Development agencies will be asked to provide funding to support the development of the network over the next 3 years, when the network will be developing the quality and scope of its services, and to finance projects that the network will submit from time to time.

Session 5

Market instruments to strengthen the demand signal

Providing insight into the financial framework

J. Heney (FAO, Italy)

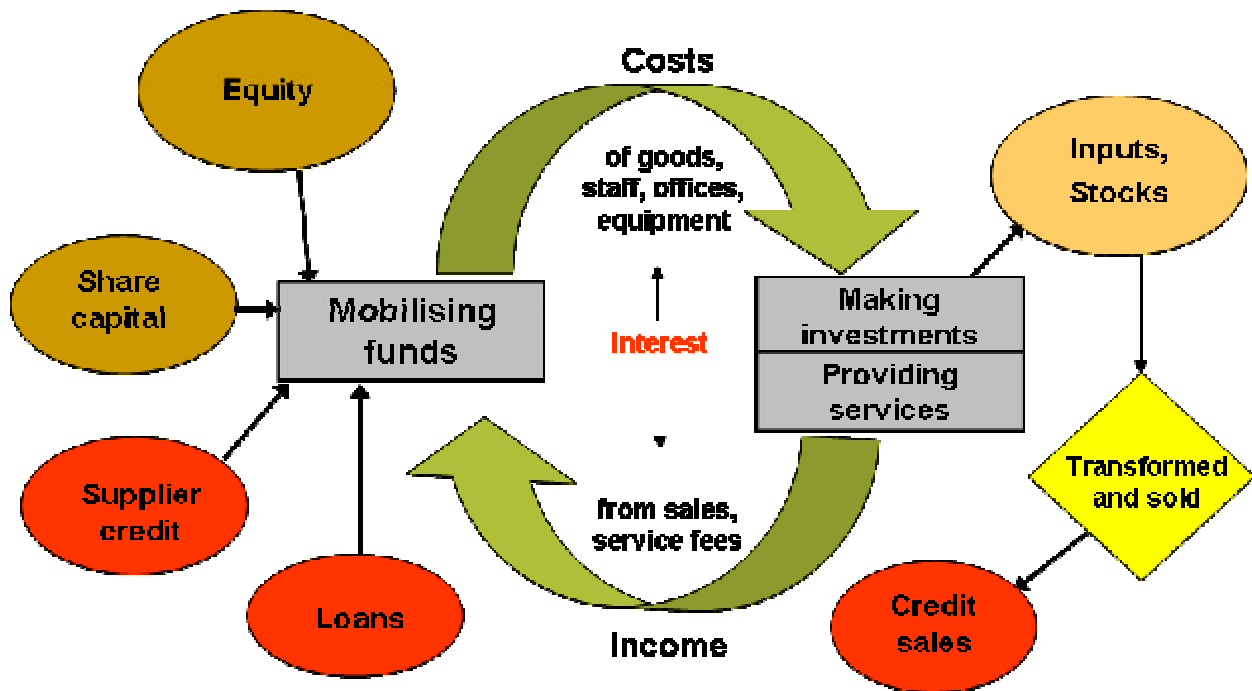
This paper offers insight into how most businesses manage their finances, and how they are linked to financial service providers. In agricultural development, as farmers become increasingly commercial in their operations, they require access to funds for investment in new business ventures and for positioning themselves in the supply chain. The supply chain consists of a series of activities, linking farmers with farmers' cooperatives, traders, processors, machinery suppliers and exporters, all of whom need to make investments and manage variable cash flows.

To provide the necessary financial services for commerce, there is a diversity of businesses that make up the financial framework. Some financial service providers are part of the formal regulated system, others are not; and the services they offer differ accordingly. This difference in service types is particularly relevant in rural areas, where there is often a lack of formal institutions and, in some cases, few informal financial service providers to support commercial development. This paper provides examples of how farmers are linking into the financial service framework, and concludes with a range of suggestions as to how rural financial services can be improved.

Figure 1 summarises the typical flow of funds, goods and services found in most business activities. All business entities must mobilise funds to invest in their inputs for production, stocks of goods for resale, or to acquire equipment to supply services to others. In a sense, the text boxes in Figure 1 represent the two sides of a balance sheet: liabilities or sources of funds on the left, and assets or what has been bought with the funds on the right. Funds may come from the business owner's own savings or equity, or from investment made by others, such as partners (share capital) or lenders.

When goods are obtained on credit from a supplier, this can be considered as a form of loan to the business, until the items are paid for. In turn, the business itself may sell goods on credit, which makes it a supplier of financial services in the same way. The centre circle illustrates the equation that determines whether a business makes a profit or a loss. Costs are incurred, and income is generated. If income exceeds costs, the business will make a profit, thus providing a return to the business owner. Interest charges may appear on either side of the equation, as a cost when paid by the business to a lender, and as an income when collected by the business from customers who obtain goods or services on credit.

Figure 1: The financial cycle in business



All the participants in the market chain are businesses, involved in transactions with each other, such as the buying or selling of goods and services. Therefore all parties are involved with the general process of managing finance, as described in Figure 1.

There is a considerable range of options as to where a business can source operating funds. However, it is always important to remember that the first source is to self-finance using savings, including any profit they have made previously from the business. In terms of borrowing, farmers may turn to:

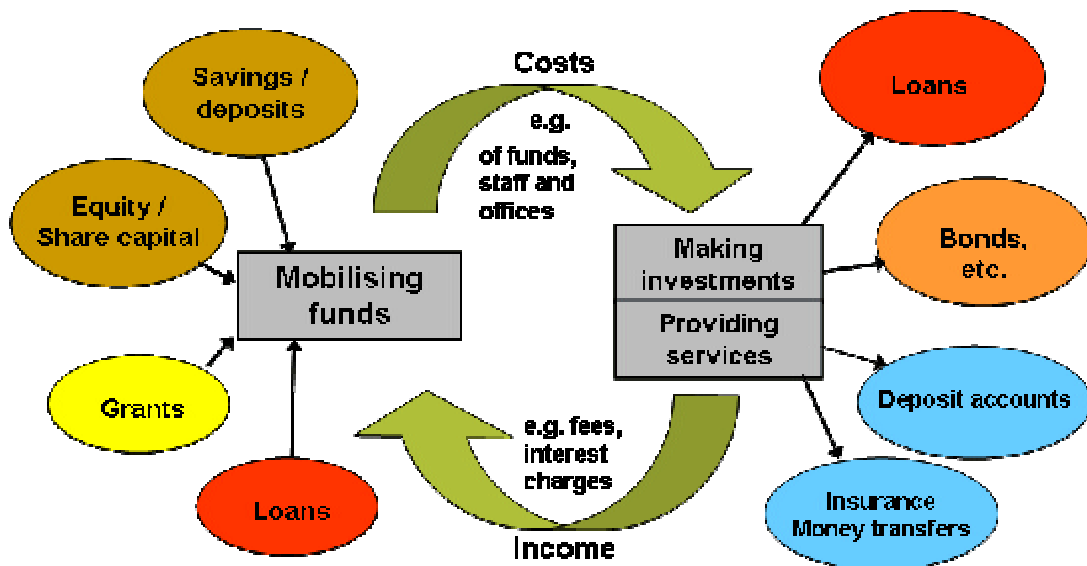
- landlords
- local moneylenders
- traders
- a cooperative to which they belong
- a rural bank
- a pawnbroker in town.

The source of finance will depend on local circumstances, available options, what the farmer is producing, and how long he has been in business. Often farmers are tied into arrangements they would prefer not to use. Banks are usually located in urban centres and may be inaccessible to many rural businesses. Cooperatives or micro-finance institutions often reach further into rural areas, but these institutions may limit access to certain groups of people. How a business is financed is governed partly by the available options and partly by the history of the business itself.

The same logic of business finance also applies to specialist financial service providers (Figure 2). Financial service providers have to mobilise funds and make decisions about how to invest their funds. They may provide services to customers, but they have the same responsibility to manage in order to show profit.

Figure 2 shows all the main possibilities a financial service provider has of raising funds (e.g. owner's equity or share capital, savings deposits collected from customers, loans taken from other institutions and, in the case of institutions offering micro-finance in particular, grants from donors or governments). The main use of funds for a financial service provider is to make loans, which then appear as assets on the business balance sheet. A formal institution may also invest the money in bonds or property, or in other banks. A full range of financial services is provided to customers, including transfer facilities, cheque-payment mechanisms and insurance policies. To make an income, a financial service business charges fees for services and interest on loans. If they are to stay in business, this income must be greater than the costs they incur, which means that interest rates and fees must be sufficiently high to achieve this.

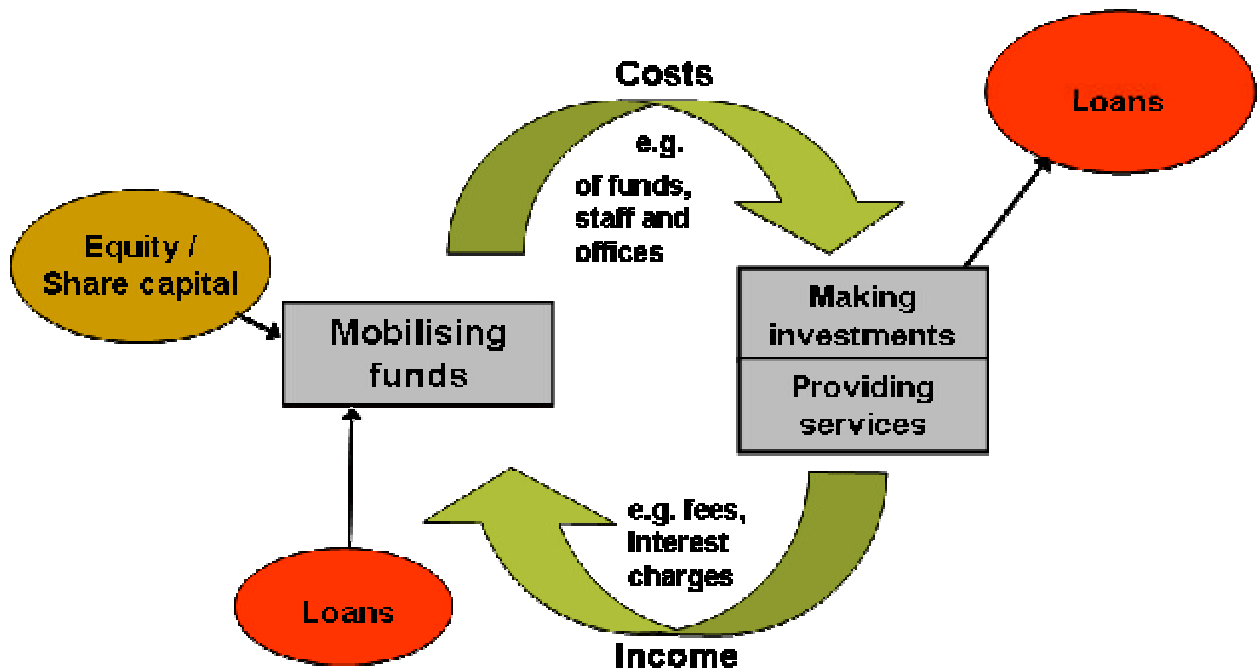
Figure 2: Financial services are businesses



The moneylender

Moneylenders are commonly found, informal financial service providers, based both in urban and in rural locations. They use equity to make loans and obtain an income from the interest charges. The rates moneylenders charge are often considered excessive. Moneylenders offer specialised services, they are convenient, and transactions are easy and discreet. Customers may have to consider using them despite the charges, rather as customers may have to consider the use of high-interest credit cards, where those are available. Moneylenders may augment the funds they have available for lending by borrowing themselves (Figure 3). Many moneylenders may also be landowners or shopkeepers, and be involved in supply-chain transactions as well.

Figure 3: The business diagram of the moneylender



Cooperatives

Cooperatives are member-owned institutions, and there are many forms of this type of organisation. They may be small, unregistered savings and loan groups, or large, regulated credit unions. The most important feature of this type of organisation is that the emphasis is not on making profit, but on providing services to members. The most important service is providing a place for people to save. Nevertheless, even these institutions must cover their costs and make a margin to prevent capital erosion. Some rural cooperatives are multi-purpose and are involved in marketing and input supply as well as financial services (Figure 4).

NGOs and micro-finance institutions

NGOs and micro-finance institutions (MFIs) are new types of financial service provider that have arisen in the past 10-20 years. Their primary focus is to provide credit to those customers who have been excluded from mainstream financial institutions. Many MFIs started operation with donor grant funds, which they may have supplemented with commercial loans. Apart from providing credit, they often offer other non-financial services as well, such as literacy training, business skills, health and nutrition advice (Figure 5). These organisations have been involved in offering their services to all sectors of society, as well as farmers. However, few of these organisations have been permitted to offer savings products, and many have rather rigid methodologies, which are not suitable for farm or equipment loans.

Figure 4: The business diagram of the cooperative

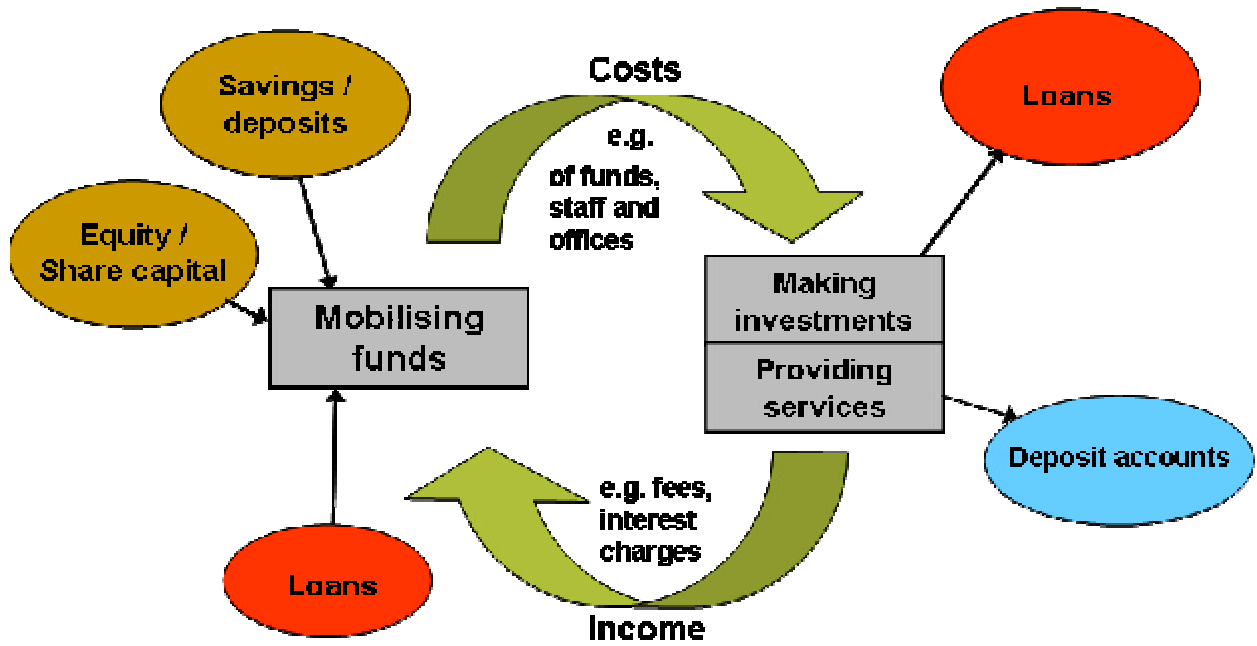
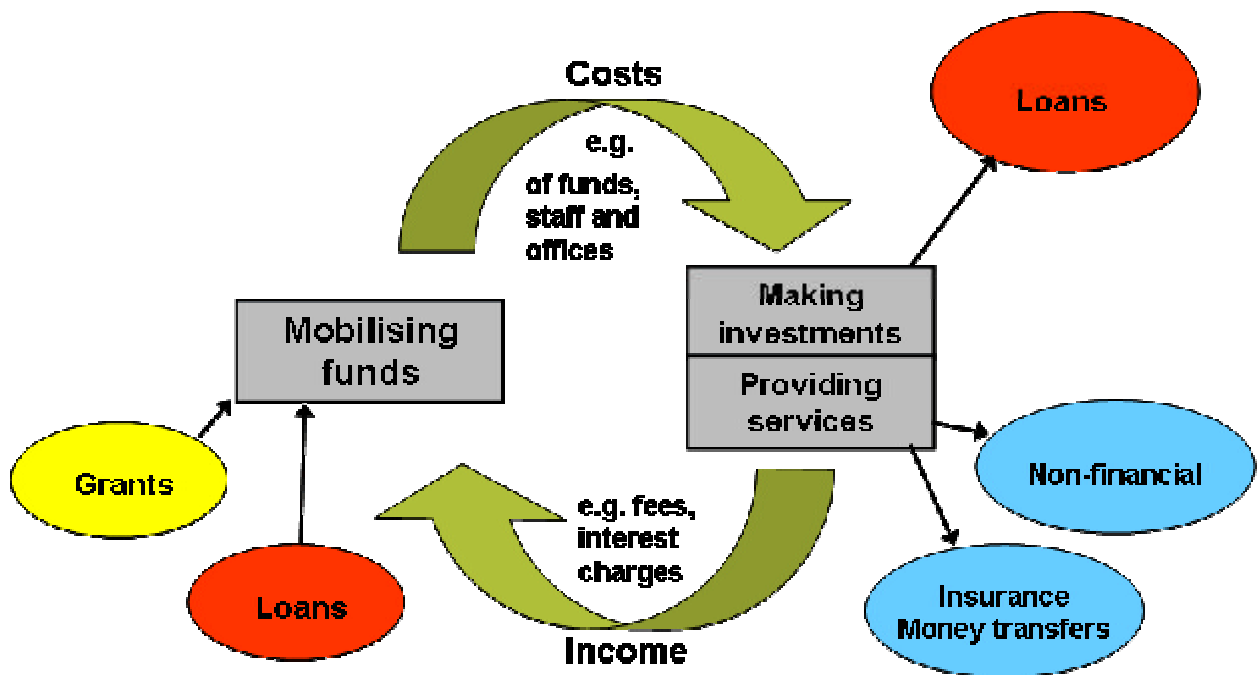


Figure 5: The business diagram of NGOs and MFIs



Regardless of ownership, type of institution, rural or urban sphere of operation, all financial service providers ultimately must:

- have their loans repaid
- cover their costs from operational income.

So, crucially, they need to:

- have good client information
- find ways to minimise the risk of lending

As shown above, there are variations in the nature of different financial service providers, but there is one common factor – they must recover the money they lend to others. If they do not, their capital is lost, and they have no means of continuing in business. If this money belongs to others, it is especially damaging, so that governments usually impose strict controls on who can provide deposit-taking services.

The key to loan recovery is in knowing your clients and ensuring they will have sufficient income flows to be able to repay the loan. As it is never possible to be absolutely certain of future income flows, and there is always a chance of wilful or unavoidable default, many lenders require additional security in the form of pledged assets or guarantees from other people. However, the priority should be to make properly assessed lending decisions in the first place.

Informal lenders

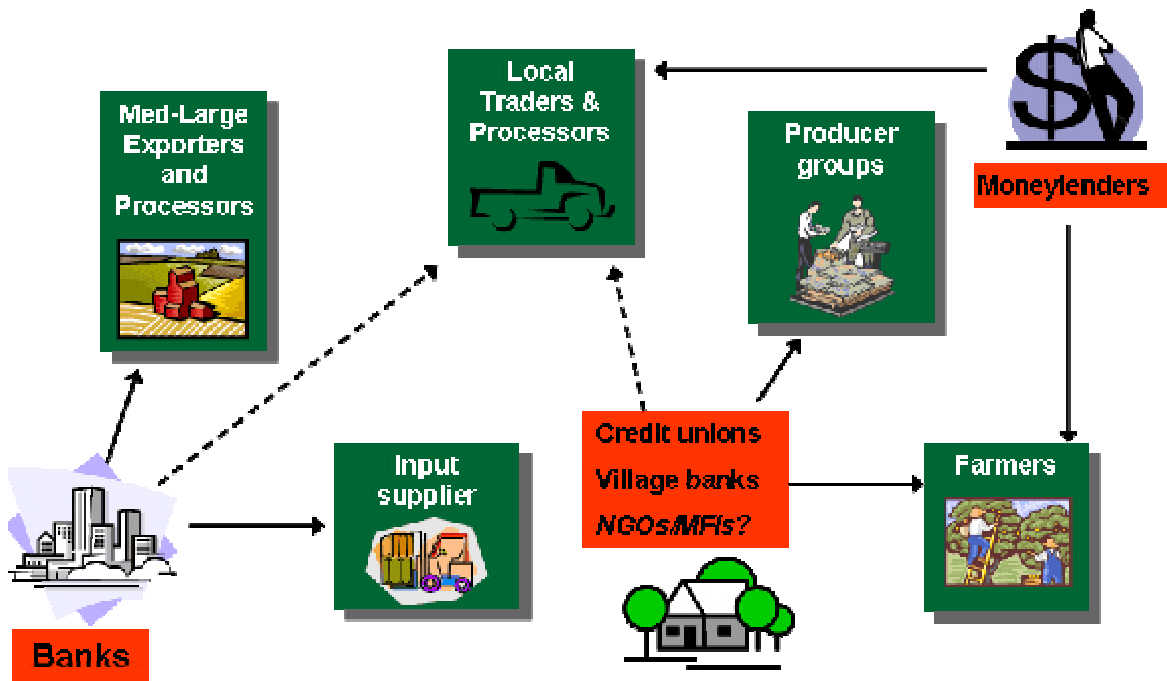
Informal lenders have a number of perceived advantages over formal financial institutions. They are normally part of the community in which they are permitted to provide the financial service, so they may have some knowledge of some of their customers. Additionally, they may have other roles that assist them to exert pressure on those who are in the position of defaulting on repayments, such as owning their land or buying their crop. Although informal lenders are a fairly constant feature of the financial landscape in all parts of the world, and are sometimes inevitable to the livelihoods of customers and the operation of many businesses, their services are sometimes unsatisfactory. Lending conditions may be very disadvantageous to the borrower, and amounts may be small and inadequate for proper investment needs.

Formal lenders

Formal financial institutions include commercial banks – state or privately owned – development banks, and certain types of non-bank financial institution. Bridging the gap between these and more informal mechanisms are various cooperatives, credit unions and micro-finance institutions. The formal providers are very risk-averse and have a tradition of insistence on asset-based collateral, which tends to exclude smaller customers. Their cost structure means they are generally urban-based, which is also where they find most large-scale customers. They are specialist institutions and are not, therefore, normally involved in marketing or other commercial activities that build links with their customers. Government regulations may be imposed on banks to require that they extend their services to excluded sectors such as agriculture, or that they open branches in rural areas, where revenue from that district alone may not cover the costs of setting up a bank and its operations there. There may be both positive and negative effects

from any possible imposition of government regulations. If the regulation involves interest-rate control, the effects are invariably negative to further profit-making for the financial institutions. The creation of a rural banking infrastructure is, however, positive once the authorisation is given for the branches to be financially sustained.

Figure 6: Agricultural financing



The nature of the formal and informal financial service providers has been described. This leads to the typical financial framework for contributors in an agricultural supply chain, illustrated in Figure 6. The formal institutions, such as banks, provide services to the large-scale participants – agri-businesses, processors, exporters, input-supply firms. They rarely provide direct services to small farmers or farmers’ organisations. Some do, but it is less usual because it is perceived to be expensive and risky to serve this type of client. Informal lenders are therefore the primary source of financial services utilised by small-scale farmers. They may have access to semi-formal agencies, which can occupy the middle ground.

This extension of the previous diagram simply imposes the web of potential supply-chain finance that may go on through all the various transactions and penalties that these businesses may make and incur. It does not mean that such finance is always available to all people in the chain; merely that such transactional finance through deferred payments is likely to be occurring up and down the chain. Connected with this, at the end of the day, are the banks providing financial services to the larger customers, who may then manage their cash flows in such a way as to be able to, in turn, provide short-term credit to their customers. Key points to remember are that:

- banks do not like financing agriculture, which they calculate to be risky
- government-driven efforts to possibly counter this through directed agricultural credit have generally created a poor repayment culture among farmers

- establishing the particular conditions that will operate in rural areas carries a high cost, so that in many rural locations there are no formal financial service providers
- as a consequence, small-scale farmers have to rely on the informal finance provided, and on whatever type of supply-chain finance is made available to them.

These points summarise the broad conclusions that one can draw so far, regarding the financial framework of agricultural producers, input suppliers, processors, wholesalers, retailers and exporters today. The supply of financial services to small-scale farmers is often inadequate, but government regulations to counter this have often, unaccountably, created more problems than they have solved. It is possible to assert that directed credit with government backing could be regarded by some as easy money, apart from the obvious fact that there are many reasons why farmers do not, or cannot, repay the loans they receive, in full, or in part. In the long term, this can be seen as very financially damaging to all financial service providers, who may bear the onus of the debts incurred, and may be trying to operate as viable businesses. The means to the encouragement of better provision of services to the agricultural sector are there. In their turn, the obligations of farmers and financial providers are currently as follows:

- small-scale farmers to improve the profitability and reliability of their production
- farmers and producer associations to secure better prices
- lenders to promote ethical and careful financial services and make better decisions
- financial products to be better adapted to customer needs and fit for a modern society
- institutional operating costs to be lowered where possible.

As previously stated, lenders need to judge that they can recover their loans. For their part, in the system as described, customers need to assess for themselves and be able to forecast in a fair, but highly competitive market place that they will have sufficient income to repay the money they have borrowed. It then follows that improvements to the profitability and reliability of a farmer's income in these circumstances become necessary for business and financial reasons. In terms of financial service providers, the possibility of lowering their costs, making fair decisions and then lending in a just and reasonable manner will improve the quality of the decisions they make and the proper finance they can offer. Greater clarity with regard to 'creative' approaches to collateral, and wider use of fair practice in joint liability by those responsible, may help to encourage formal lenders to consider that they are in a position to lend responsibly to the agricultural sector in the future.

Looking more closely at some of these suggestions, we first examine sensible ways of improving the profitability and reliability of farming. Quality technical advisory services can offer the right kind of support - but much more, of a proper and practical nature, needs to be done to provide a properly managed system, and to provide more equitable extension services. In a modernised system, properly authorised, the personnel engaged in providing advice to farmers would naturally need better instructions, training, enterprise planning, market research and budgeting controls.

In the current circumstances, there is scarcely a doubt that diversified income sources can help to ensure more stable income flows in households that are currently economically deprived, but there is not the scope in this report to discuss how this could relate to lending. Advisory services

need to appreciate this, and to have sufficient information to be able to give sensible and useful advice on what the options actually are. The same is true of increased economies of scale and adding value to products, both of which can increase profitability (see below). As a corollary, these improvements may necessitate group action by farmers to jointly own and manage equipment for production or processing activities. Advisors need to be able to provide quality guidance and advice on the costs and benefits of such actions.

Profitable and reliable production

Requirements are:

- technical services
- better planning skills
- diversified income
- secure market through contracts
- economies of scale and value addition
- health and life insurance
- livestock and weather-indexed crop insurance.

Another possibility within the current system is securing more stable prices through contract arrangements. Finally, increased access to affordable insurance would be a reasonable step in reducing certain types of risk for small farmers. Currently situations occur where farmers are unable to keep farming satisfactorily; in certain instances, for example, if they or other family members are sick and cannot afford healthcare, or debts cannot be repaid when a farmer dies, health and life insurance may not only aid individuals but also lower certain types of risk for lenders. On a different note, with crop and livestock insurance some risk can be reduced. In practice, however, such schemes for crops and livestock have so far proved difficult in both detail of design and implementation.

Market links

It is impossible to over-emphasise the importance of adequate market links in successful business development. Everything that can be done to increase farmers' awareness of markets, market prices and quality requirements has been done in the past. For the present, producer associations or marketing cooperatives could act with probity and proper responsibility in securing contracts and organising small producers to deliver goods of the right quality and quantity to meet contractual arrangements. The basic points are that proper market links and contractual arrangements generally reduce risk, producer associations enable goods to be sold in larger quantities and at higher quality, and market information could improve farmers' bargaining positions.

In India, where 200 million people are engaged in farming or related activities, the India Tobacco Company (ITC), now a conglomerate dealing in many different lines of business, is developing its competitive agricultural business by empowering, not misleading or eliminating, the independent small farmer. Its business model centres around the deployment of a network of

Internet-connected kiosks, known as *e-choupals* (a high-tech version of the traditional *choupal* or village gathering place in Hindi), where farmers are provided with the latest weather reports, local and international produce prices and agricultural advice. The kiosks also serve as procurement and purchase points, allowing farmers not only to sell their produce to ITC, but also to buy agricultural inputs and consumer goods. Each *e-choupal* is managed by an ITC-appointed *sanchalak*, a respected farmer of the community. The system lowers procurement costs for ITC and enables them to pay higher prices to the farmers. The farmers also benefit from transparent pricing and proper weighing practices. So far, the *e-choupal* system has been used for the procurement of soyabeans, coffee, shrimps and wheat. For more information see www.itcibd.com/e-choupal1.asp. Microsoft is now investing in this idea to spread access to this commercial sector.

As previously remarked, the ability to insure crops and livestock would be instrumental in reducing farmers' production risk and thus one aspect of the perceived risk of lending to farmers. Using weather-based index and area-based yield contracts to insure against natural disasters can offer increased affordability and accessibility of insurance services for those customers who need it. Because triggers can be verified independently, there may be some reduction in the misplaced situation of vulnerability to political interference and manipulation of farm losses. It is practical to implement, and has low administrative and transaction costs (currently there are little or no government subsidies or interventions available).

Weather-based index insurance makes payments proportional to the difference of a measurable weather event (rainfall, temperature) from a certain trigger, as measured at regional weather stations. Area-based index insurance makes payments proportional to the decline of area yields below a certain trigger at the county or district level. Insurance is sold in standard units (for example, \$10 or \$100 payouts), with a standard contract or certificate for each unit purchased. The premium rate is the same for all buyers, who all receive the same indemnity if the insured event occurs. Buyers are free to purchase as many units of the insurance as they wish. The insurance is written against the average yield for a region (county/district) and a payment is made when the measured regional yield falls below a defined limit (for example, 80% of normal).

The National Smallholder Farmers' Association of Malawi, in conjunction with the Insurance Association of Malawi and with technical assistance from the World Bank and Opportunity International, have designed an index-based weather insurance contract that will pay out if the rainfall needed for groundnut production is insufficient. If there is a drought that triggers a payout from the insurance contract, funds will be paid directly to the bank to pay off the farmers' loans. If there is no drought, the farmers will benefit from selling the higher-value production in the market place. The insurance will help farmers obtain the financing necessary to purchase certified seeds, which produce higher yields and are more resistant to disease.

BASIX (one of India's largest micro-finance institutions with nearly 100,000 borrowers in nine states) launched India's first rainfall insurance programme in July 2003 through its KBS Bank in Mahabubnagar in Andhra Pradesh, bordering Karnataka (the district has experienced three consecutive droughts during recent years). One of the main incentives for KBS Bank to offer rainfall insurance was that local area banks are limited to operations in three adjacent districts and therefore face limited portfolio diversification. Rainfall insurance for its borrowers would mitigate the natural default risk inherent in lending in such drought-prone areas. KBS bought a bulk insurance policy from ICICI Lombard and offered individual farmer policies for three categories of groundnut and castor farmers – small, medium and large. Farmer uptake was

immediate, with around 100 farmers signing up the first day. Overall, a win-win outcome of the scheme is expected, in that not only do farmers benefit (from insurance against catastrophic events, improved income stability, and greater access to credit and lower interest rates), but banks also stand to benefit from secured lending and reduced default rates, improved collateral, and increased lending amounts and savings in rural areas.

Better lending decisions

If financial service providers are to make and recover their loans, they must be in possession of information about the status of (and the reason for) the lending, and of proper information about conditions; be in a position of requiring correct information from customers; and be able to conduct financial analyses that can show clearly whether or not it will theoretically be possible for someone to repay a loan. In the system as it stands, lending officers are trained to undertake more appropriate background investigations of applicants and assess their character and attitude to their business. There is always room for improvement. To the rural farmer who has considerable variability in income flows, cash flow-based analysis of repayment capacity appears to be important. Simple gross margin or profit budgets are not considered a sufficient basis on which to judge repayment capacity. Household expenditure requirements are taken into account, as well as production input costs. It does help somewhat in evaluating loan applications from farmers, if loan officers have a good knowledge of agricultural enterprises in terms of production methods and market opportunities. This facilitates a kind of knowledgeable conversation with farmers, and theoretically enables better evaluation of the financial prospects and level of risk involved. Likewise, making use of local organisations working in areas where the financial institution has customers may help officers to keep up-to-date with development schemes and agricultural practices. Background information on customers should, of course, be properly obtained from the customers themselves.

Credit scoring is a scientific method of assessing the credit risk associated with new credit applications. Statistical surveys produce theoretical predictive relationships between application information and the likelihood of satisfactory repayment. Surveys attempt to be empirically designed (they are developed entirely from information gained through prior experience), in a lending situation that is currently subject to all kinds of influences that would prevent completely accurate forecasting. Therefore credit scoring is only an objective risk-assessment tool, as opposed to any subjective methods authorised currently, which may attempt to rely on such things as a lending officer's opinion. Clearly, credit scoring is a risk-management tool. Presently, it is still held that scoring systems of this type may help a bank ensure more consistent underwriting and may provide management with a more insightful measure of credit risk, as well as positive results for the farmer, whatever the outcome. It is not suitable for all financial institutions – it works best for those with excellence in individual lending technology and with a large database of, historically, successful lending to the farmer, with probity, and with satisfactory results for all those who may be concerned.

More diverse financial products needed

There is something of a fixation, by some, on credit in the form of loans with specified repayment terms when talking of financial services. However, it is just as important for people to be able to save, to draw on those savings when they want, to make payments to other people and to be able to manage variable cash demands by borrowing when necessary. I would argue that an accessible bank account with overdraft facilities would be perfect for most business operations.

There is increased awareness of the importance of savings facilities, and those institutions legally enabled to offer deposit-taking do so. The main problem for rural customers is the travel time that may be involved in getting to such a facility, and this has led to the growth of informal savings groups and experiments with mobile banking or doorstep collection. There has been less experimentation with flexible loan products, which could be seen as a disadvantage to both farmers and traders. However, there are examples – the Kisan Credit Card system for farmers in India is a move in the right direction – and more could be done to introduce overdraft or credit-line products for agricultural and micro-enterprises.

New technology is likely to transform the whole financial product scene. In the Philippines, rural banks are already introducing payment services, cash withdrawals, deposits and loan repayments by mobile phone text messaging. This methodology is likely to outstrip any other outreach mechanism, and is the equivalent of Internet banking. It certainly has the potential to facilitate trade and commercial transactions in remote rural areas.

Alternative approaches to collateral

As stated above, the ability to provide assets as collateral does increase access to loan finance by reducing the level of risk carried by the lending institution. However, the lack of land titles and difficulty of controlling movable assets results in limited lending to farmers by conservative-minded banks. There are options for overcoming these constraints, however, such as the acceptance of joint liability groups or personal guarantors in place of tangible assets. Leasing arrangements leave the ownership of the asset in the hands of the financier until it is fully paid for, thus recovering the asset in the event of default is easier.

There is much current interest in development circles over the possibility of establishing managed warehouse systems, in which farmers can deposit their crops at harvest time and then borrow from banks using the stored crop as collateral – a system known as inventory credit. This provides more flexibility at harvest time and enables farmers to control when they sell their crops in order to get better prices. Additionally, it may be possible for governments or development agents to consider providing loan guarantees to financial institutions to encourage them to take more risk with their lending decisions. These schemes are not always successful, and should not be used to remove responsibility for lending decisions from the financial service provider. However, they may have a role in promotion of the expansion of financial services to remoter areas, or for longer-term investment in agricultural equipment.

Lowering costs of operating in rural areas

Finally, in this overview of the financial framework surrounding rural businesses, a reminder of some of the ways in which financial service providers could try to reduce costs of operating in more remote, low-population density areas. Two words predominate – technology and linkages. Computerisation and mobile phone technology are making things possible that could not have been achieved before, and this trend looks set to continue. Transactions can be made more quickly and with more security, and back-office systems can be updated and monitored more effectively. If new technology can be added to the possibility of creating client access points in shops, post offices, markets and so on, then we will have started to address the issue of outreach in rural financial services more effectively than ever. However, links are also about small groups of farmers being able to access services through local NGOs or MFIs acting as intermediaries for

bigger banks. Group organisation remains an important way of lowering costs of operation when dealing with poorer clients.

The net result of all improvements should be to ensure more access and more choice for all business people living in rural areas. Interventions should always aim to keep this in mind and think in terms of improving the financial landscape in the long term by encouraging diversity of financial service providers and offering diverse products that meet the needs of all the actors in the different supply chains.

What about self-help?

It seems appropriate to suggest one other solution to ensuring financial services that meet an individual's needs, and that is for that individual to start them up himself. Self-help solutions have always been there, and will always be there. It often needs some inspirational person to start the idea, and then if a real need is properly met, the idea continues to exist and grow. I cite just one example here. The extraordinary growth of women's self-help groups in India has been the result of official encouragement, coupled with an array of promoting institutions, from tiny NGOs to major foundations to commercial banks. These groups manage savings, give loans to members, and are often linked to banks, from which they may take a loan to increase the amounts members can borrow. However, it is not clear if the aim of these groups is to be a permanent institution, or simply to be an interim measure until women may hold bank accounts in their own right.

Some federations of women's groups have already converted into cooperative societies, and that is a common way for all types of self-help groups to develop, if they are to be sustainable. Cooperative legislation is a way for many groups to become legal and to meet prudential standards of operation. Savings and credit cooperatives in East Africa, and credit unions in many parts of the world, have often grown from small beginnings into major financial institutions. Others have fallen by the wayside or been destroyed by government intervention. Member-owned institutions can be major contributors in the financial landscape and provide much-needed services in rural areas. However, all the remarks made above about good practice in financial service provision apply to this type of organisation, just as to any other.

The Rural Finance Learning Centre is sponsored by FAO, IFAD, the World Bank and GTZ. It contains a library of reference materials and a section dedicated to training with self study material, training guides and lists of training opportunities.

A banker's perspective from India: NABARD, risk mitigation and commodity futures in agriculture

S.M. Sheokand (NABCONS Consultancy Services, India)

The Indian Parliament, through Act 61 of 1981, approved the setting up of the National Bank for Agriculture and Rural Development (NABARD), which came into existence on 12 July 1982. NABARD was established as a development bank, in terms of the preamble of the Act, 'for providing and regulating credit and other facilities for the promotion and development of agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas, with a view to promoting integrated rural development and securing prosperity of rural areas and for matters connected therewith or incidental thereto.'

NABARD took over the functions of the erstwhile Agricultural Credit Department and Rural Planning and Credit Cell of the Reserve Bank of India (RBI), the central bank of the country, and the Agricultural Refinance and Development Corporation. Its subscribed and paid-up capital was Rs 1000 million, which was enhanced to Rs 5000 million, contributed by the Government of India and RBI in equal proportions. Currently it is Rs 20,000 million, contributed by the Government of India (Rs 5,500 million) and RBI (Rs 14,500 million).

NABARD has the following functions:

- serves as an apex financing agency for institutions providing investment and production credit for promoting the various developmental activities in rural areas
- takes measures towards institution-building for improving the absorptive capacity of the credit-delivery system, including monitoring, formulation of rehabilitation schemes, restructuring of credit institutions and training of personnel
- co-ordinates the rural financing activities of all institutions engaged in developmental work at the field level, and maintains liaison with the Government of India, state governments, RBI and other national-level institutions concerned with policy formulation
- undertakes monitoring and evaluation of projects refinanced by it
- supervises the cooperative banks and regional rural banks
- finances rural infrastructure projects, including market projects by the state government.

NABARD's refinance is available to state cooperative agriculture and rural development banks, state cooperative banks, regional rural banks, commercial banks and other financial institutions. While the ultimate beneficiaries of investment credit can be individuals, partnership concerns, companies, state-owned corporations or cooperative societies, production credit is generally given to individuals.

NABARD operates throughout the country through its 28 regional offices and one sub-office, located in the capitals of all the states/union territories. It has 336 district offices across the country and also has six training establishments.

A summary of NABARD's balance sheet is presented in Table 1.

Table 1: Summary balance sheet of NABARD (Rs million)			
As at 31 March	2001-02	2002-03	2003-04
Capital	20,000	20,000	20,000
Reserves & surplus	182,660	194,690	206,600
Borrowings & deposits	234,950	276,340	315,880
Others	13,380	9,680	16,410
Total	450,990	500,710	558,890
Refinance and loans & advances	410,630	453,610	487,900
Investments	12,980	13,550	24,120
Others	27,380	33,550	46,870
Total	450,990	500,710	558,890

Innovations by NABARD

Self-help group- bank linkage programme: the genesis

A series of research studies conducted by NABARD during the early 1980s showed that, despite having a wide network of rural bank branches which implemented a variety of poverty alleviation programmes seeking creation of self-employment opportunities through bank credit for almost two decades, a very large number of the financially impoverished continued to remain outside the formal banking system. These studies also showed that the existing banking policies, systems and procedures, and deposit and loan products were perhaps not well suited to meet their needs. It appeared that what the financially disadvantaged really needed was a better access to these services and products, rather than cheap subsidised credit.

Thus began a search for alternative policies, systems and procedures, savings and loan products, other complementary services, and new delivery mechanisms, which would fulfil the requirements of all those in financial straits. The emphasis was placed on improving their access to micro-finance rather than just micro-credit. As a large, village-based network of state-owned bank branches already existed, it focused not on creating alternative organisations, but on finding ways and means of proper access by the financially disadvantaged to the existing banking network. Many research studies were carried out, in-house as well as sponsored by professional institutions, and some action research projects, funded out of the research and development fund of NABARD, led it to develop the self help group–bank linkage model, as the core strategy that

could be used by the banking system in India for outreach to the disadvantaged, who had hitherto been bypassed by them. The strategy involves forming small, cohesive and participatory groups of the impoverished, encouraging them to pool their means regularly and using the pooled resources to make small interest-bearing loans to members, and in the process learning the methods of financial discipline. Bank credit follows. It needs to be emphasised that NABARD sees the promotion and bank linking of self-help groups not merely as a credit programme, but as part of an overall arrangement for providing financial services to the financially disadvantaged in a sustainable manner, and also as an empowerment process for the members of these self-help groups.

It was under these conditions that the self-help group–bank linkage programme was launched by NABARD in 1992, with the policy back-up of the RBI.

Achievements

Starting with the NABARD-led limited-scale pilot project in 1992, which aimed at promoting and financing 500 self-help groups across the country, the self-help group–bank linkage strategy has come a long way. Nearly 1.62 million self-help groups were provided bank credit of over Rs 68,984 million by March 2005. Almost 90% of groups are women’s groups. Over 35,290 bank branches of 48 commercial banks, 196 regional rural banks and 316 cooperatives were involved in financing these groups.

Table 2: Highlights of self-help group–bank linkage programme (at March 2005)

Cumulative number of self-help groups linked by March 2005 (provisional)	1,618,476
Percentage of women’s groups	90
Number of families covered (million)	24.2
Number of participating banks	560
Number of NGOs participating	3,024
Bank loan released (Rs million)	68,984
NABARD refinance released (Rs million)	31,300

Repayments by members to self-help groups have been exceedingly high and on time. Repayments have hovered around 98%.

Trend in progress of self-help group–bank linkage

A summary of progress under the self-help group–bank linkage programme made between 1992–93 and 2004–05 is presented in Table 3.

Table 3: Summary of progress under the self-help group–bank linkage programme, 1992–93 to 2004–05

Year	Total self-help groups financed			Bank loan (Rs million)		
	During year		Cumulative	During year		Cumulative
	No.	% Growth		Amount	% Growth	
1992–99	32,995		32,995	570.7		570.7
1999–2000	81,780	148	114,775	1,359.1	138	1,929.8
2000–01	149,050	82	263,825	2,878.9	112	4,808.7
2001–02	197,653	33	461,478	5,454.7	89	10,263.4
2002–03	255,882	29	717,360	10,224.0	87	20,487.0
2003–04	361,731	41	1,079,091	18,555.0	81	39,042.1
2004–05	539,385	49	1,618,476	29,942.5	61	68,984.6

Micro-finance institutions

The mechanism of directing credit to the financially disadvantaged through sponsored programmes has suffered from poor recovery rates, which have had a reverse impact on the recycling of credit. Also, there has been a mismatch in what these customers needed, particularly in terms of products and product-delivery mechanisms, and what conventional financial institutions could offer. To remedy this situation, micro-finance institutions (MFIs) emerged. MFIs are institutions, other than banks, engaged in the provision of financial services to the disadvantaged.

The MFIs can be broadly subdivided into three categories of organisational form: not-for-profit MFIs, cooperative MFIs, and for-profit MFIs. While there are no data on the number of MFIs operating in India, it is estimated that they could be around 800. An overwhelming majority of MFIs are, however, small in size and are from the NGO sector, with the number of clients ranging anywhere between 500 and 1,000. The large MFIs typically belong to the for-profit category. In short, India has a large number of MFIs with diverse legal forms, varying significantly in size, outreach and credit-delivery methodologies.

The practice of banks lending to MFIs for further on-lending to self-help groups and through other mechanisms has been recognised as a legitimate financial intermediation activity by the RBI. It must be said, however, that this recognition from the central bank is limited to lending by MFIs to its micro-credit clients through on-lending funds provided to it by banks, donors or apex agencies, and does not include provision of savings services in any form.

Kisan Credit Card

Introduced in 1998-99 through NABARD, the Kisan (farmer) Credit Card (KCC) product was aimed at simplifying the procedures for providing timely and adequate short-term institutional credit to farmers, while concurrently reducing transaction costs for bankers. The product has done well, and the number of KCCs issued in successive years has grown steadily. At the end of March 2005, the number stood at 51 million cards; the cooperative banks accounted for the largest share. KCC is emerging as a widely accepted mechanism for delivery of crop loans. KCC gives farmers an easy option to borrow and quickly repay, and they have made good use of it.

Rural non-farm sector

NABARD assists in the promotion of viable enterprises in rural areas in the business, service and industry sectors, by providing promotional support to NGOs/banks. The promotional support is provided for establishing rural *haats* (mobile weekly markets), development of rural clusters, rural entrepreneurship and marketing of non-farm products.

Risk mitigation

Agricultural insurance in India was historically provided by general insurance companies. With a view to providing focused attention, the Agricultural Insurance Company of India Ltd (AICI) was established in 2002. NABARD is a partner in this company, along with other insurance companies, and has contributed 30% of equity. The company is expected to co-ordinate all the ongoing agricultural insurance schemes in the country; the important ones are detailed below.

Crop loan insurance

The crop loan insurance scheme provides insurance against reduction in crop yield because of natural calamities. This cover is provided for selected crops, and so far 59 million farmers have been covered under the scheme. The claims are settled on an area basis, therefore there are delays in the settlement of claims. Farmers want claim assessments to be made on an individual basis rather than an area basis.

Weather insurance product

A leading private general insurance company has launched an index-based rainfall insurance with the clients of the local area bank in Andhra Pradesh. Under this arrangement an index is created, based on an analysis of historical correlation between rainfall and crop (groundnut) yield, by assigning weights to critical time periods. The historical weather data are then mapped onto this index to arrive at a normal threshold index. The actual weather data are superimposed on this to arrive at the actual index level. In the event of a deviation in either direction (excess or deficient) between the normal index and the actual index, compensation is paid out to the insured on the basis of a pre-agreed formula. This is still in the experimental stage. Along these lines, AICI has also introduced an insurance product called Varsa Bima (rainfall insurance) in four states.

In addition to agricultural insurance, life and health insurance is also provided to farmers by various insurance providers. Life-insurance schemes are well established, whereas health-insurance schemes are still evolving.

Commodity futures markets in India

NABARD is participating in the management and equity of major national-level commodity exchanges, in partnership with various other financial institutions. It has contributed Rs 45 million and Rs 125 million to the equity of the National Commodity and Derivative Exchange (NCDEX) and the Multi-Commodity Exchange (MCX), respectively. The role played by these institutions and the present status of commodity future markets in India is described below.

Background to commodity exchanges

Agricultural future markets, being a market-based instrument for managing risks, can contribute to the orderly establishment of a more open and liberalised agricultural sector. Future markets have emerged out of the need to deal with the risks associated with agricultural production, storage, trade and processing. They have also emerged in response to the counter-party default risk associated with forward markets. Commodity future markets, initially concentrated in a small number of developed economies, are now being established in newly liberalising, developing economies such as India, China, Brazil, Poland, Hungary, South Africa and Turkey.

Agricultural commodity futures can potentially play a crucial role in the price risk-management process, especially in an economy such as India's. The two main economic roles of agricultural futures markets are hedging price risk, and providing a price-discovery mechanism. At the time of planting or sowing, farmers are not able to foresee the prices that would prevail at the time of harvest. By providing a mechanism for the discovery of prices in the future, futures markets can facilitate production, processing, storage and marketing decisions. It helps farmers, traders, processors and exporters by improving price discovery in their forward planning decisions and facilitates assessment of financial/credit requirements.

Agricultural commodity futures exchanges in India are still not developed, compared with other developed countries. It is only after the onset of liberalisation during the 1990s that attitudes towards futures trading have changed, and its potential benefits are now being acknowledged in policy circles. However, there are still a number of impediments to their growth, many of which are on account of regulatory provisions, while others relate to the institutional weaknesses and practices of trade. The major problems afflicting the commodity exchanges are poor infrastructure, lack of online trading facilities, low level of awareness among various stakeholders (including farmers), strong presence of unofficial/illegal trading, high operational costs, unfavourable/stringent trading parameters, single commodity focus, and poor transparency in transactions. As a result of these impediments, membership of commodity exchanges and the volume of futures transactions have remained low.

Evolution of commodities futures markets in India

Although India has a long history of trade in commodity derivatives, this sector has remained underdeveloped due to government intervention in many commodity markets to control prices. The production, supply and distribution of many agricultural commodities are still governed by the State, and forward and futures trading are selectively introduced with stringent controls. Free trade in many commodity items is restricted under the Essential Commodities Act, 1955 and agriculture produce marketing committees' acts of various state governments. The forward and futures contracts were, until April 2003, limited to only a few commodity items under the Forward Contracts (Regulation) Act, 1952.

The Bombay Cotton Trade Association set up the first commodity exchange in India, and formal organised futures trading started in cotton in 1875. A multitude of other exchanges followed, trading in such commodities as raw jute, jute products, pepper, turmeric, potatoes, sugar, food grains and gold. Many of these exchanges were set up in major agricultural centres in north India before the First World War broke out, and were mostly engaged in wheat futures until it was prohibited. During, and in the aftermath of, the Second World War, futures trading in most agro-commodities was banned, purportedly to curb hoarding and inflation.

Milestones

In the process of economic liberalisation, the 1990s witnessed a large number of reform measures in commodities futures markets. Some of the significant milestones are listed below.

- In 1993 the Government of India appointed an expert committee on forward markets, which recommended the reintroduction of futures, and also aimed to widen coverage to many more agricultural commodities.
- In 1996 the Forward Market Commission, the regulatory body, launched major efforts to reform and strengthen commodity future markets in India.
- In 1998 a national workshop on commodity futures markets was jointly organised by the Government of India and the World Bank/UNCTAD. This brought the subject of commodity futures markets to centre stage in policy, as well as in academic, circles.
- In 2000 the national agricultural policy envisaged external and domestic market reforms and the dismantling of all controls and regulations in agricultural commodity markets. It also proposed enlargement of coverage of futures markets to reduce the wide fluctuations in commodity prices, and to hedge the risk arising from price fluctuations.
- The Government of India has recently decided to permit futures trading in almost all agricultural commodities. Trading in 'options' in commodities, however, continues to be banned.

Current status

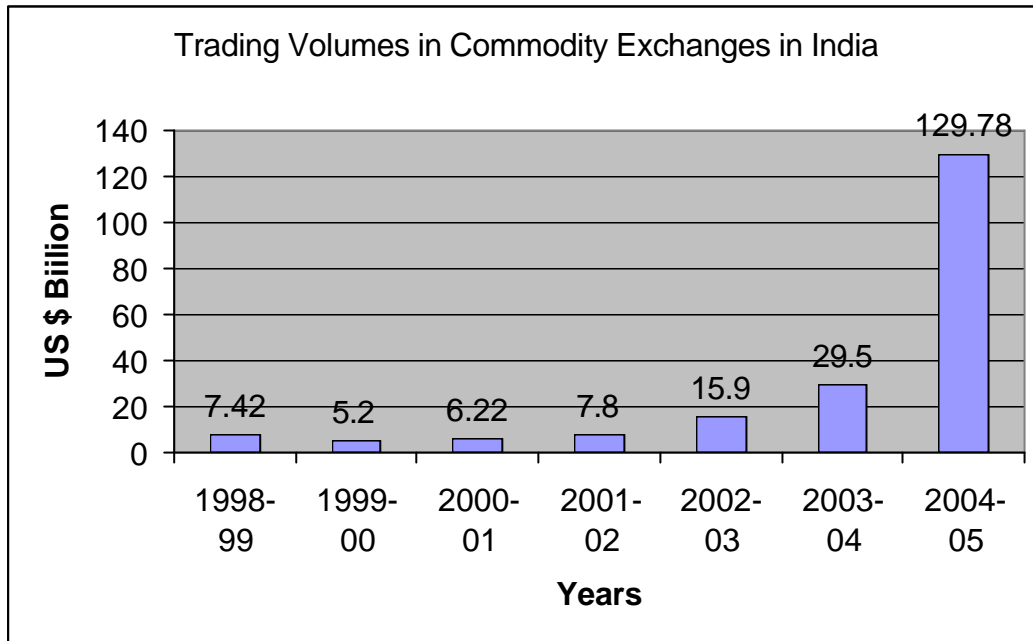
Currently there are 24 commodity exchanges located in various parts of the country, which are recognised for conducting futures trading in various commodities. Of these 24 commodity exchanges, four are multi-commodity exchanges with online trading systems, and the remainder are single-commodity exchanges or commodity-group exchanges with open outcry trading systems. Two commodity exchanges (the India Pepper and Spice Trade Association, Cochin and Bombay Commodity Exchange Ltd) have been upgraded to international exchanges to deal in international contracts in pepper and castor oil, respectively. During 2003, national multi-commodity exchange (NMCE) status has been accorded to four commodity exchanges (the National Multi-Commodity Exchange, Ahmedabad; National Board of Trade, Indore; NCDEX, Mumbai; and MCX, Mumbai).

During the past few years there has been heightened activity in the Indian commodity futures markets. The volume of trade in commodity exchanges has increased from US\$ 7.80 billion in 2001-02 to US\$ 129.78 billion in 2004-05 (Forward Market Commission) ¹⁹. This represents an

¹⁹ The FMC website (www.fmc.gov.in) provides fortnightly data on trade volumes of different commodity exchanges. This figure has been compiled from the fortnightly data.

increase of over 16 times in turnover of commodity exchanges in just 3 years. The annual turnover in commodity exchanges during the past 6 years is given in Figure 1.²⁰

Figure 1: Annual turnover in commodity exchanges during the past 6 years



The major part has come from three newly established NMCEs, which account for 81% of the total trade volume. The NCDEX alone accounted for 47% of total turnover. The share of these commodity exchanges is given in Figure 2.

Figure 2: Share of commodity exchanges in trade volume

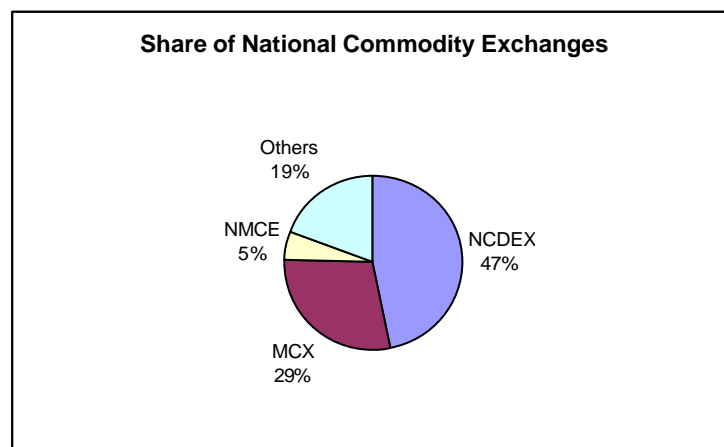


Table 2 gives the names of three most traded commodities in the national commodity exchanges in India. In NCDEX, trade is dominated by agricultural commodities; in MCX, by precious metals; and in NMCE, by plantation crops.

²⁰ US\$ = INR 44 approximately.

Table 2: Most actively traded commodities (2004- 05) (US\$ bn)		
NCDEX	Total turnover	60.45
	Guar seed	20.45
	Silver	6.82
	Soya oil	4.77
MCX	Total turnover	37.73
	Silver	18.64
	Gold	12.73
	Guar seed	1.00
NMCE	Total turnover	6.42
	Pepper	2.25
	Soya oil	1.59
	Rubber	1.02

Need for agricultural commodity futures

The organised futures markets can provide a transparent price-hedging mechanism and can be used to obtain competitive prices. Currently, the prevailing market price of various commodities, primarily agricultural produce, influences farmers' decisions on the next cropping pattern to a large extent. This reliance on prevailing market prices has the following implications for farmers and for the price realised from their crops. After harvesting, farmers carry their produce to local *mandis* (spot markets) and sell at the prevailing market/*mandi* price. A typical farmer has very little information on the trend in prices or information on the prices prevailing in other markets. Furthermore, the farmer has limited holding power with outstanding debt obligations in respect of money borrowed for inputs, such as seeds, fertilisers and other items used as inputs during the sowing period. As a result, a typical farmer has limited bargaining power, having already incurred trouble and expense to transport his produce to the local *mandi* and ends up using the prevailing market price to sell his produce.

In some areas/crops, farmers sell their produce forward to middlemen, who are expected to pick up produce from the farm gate. Usually middlemen pay a lower price in case the market price falls after their contract with the farmer. Thus farmers are not protected against downward movements in prices, even after agreeing to sell forward. Also, they do not get any benefit of upward movements in market prices, as they have limited negotiating power *vis-à-vis* middlemen, who usually finance farmers' requirements in the interim period before harvesting.

The use of prevailing market prices in the determination of the next season's cropping pattern also leads to the 'cobweb effect'. Higher market prices for a crop in any year usually leads to large-scale sowing of that particular crop the next year, and consequently to lower prices due to

surplus production. However, lower prices in a commodity dissuade farmers from sowing that commodity, and farmers are not able to take advantage of high prices caused by lower supply. There have been efforts in the past to reduce the cost of credit from the organised sector to farmers through directed lending and administered prices. However, there is a need to provide the farmer with some holding power in the post-production period. Currently, in the absence of reliable price benchmarks or accredited warehousing facilities, and with inadequate physical logistics, banks are not keen to lend against stored commodities.

Ideally, expectation of future prices should influence a farmer's decision regarding the next year's cropping pattern. It is here that commodity futures can play an important role in guiding farmers' decisions on planting, and protect them against fraudulent middlemen.

Advantages

Commodity futures exchanges are expected to extend the following benefits for the farmers.

- **Price dissemination:** prices traded on commodity exchanges are expected to evolve as benchmark prices and are expected to benefit all farmers, whether or not they participate in the commodity markets. Once issues relating to the price-discovery process are streamlined, knowledge of spot and future prices available from commodity markets should enable farmers to: (i) decide on their cropping pattern; (ii) negotiate better prices while selling their produce; and (iii) make knowledgeable decisions regarding the timing of their decisions to sell. This can benefit farmers directly, as an individual farmer should be able to take advantage of this price information.
- **Price hedging:** the participation of farmers in commodity exchanges should enable farmers to sell forward and hedge against price risk. A farmer can determine his or her selling price for an expected crop by selling futures on the exchange platforms, and protect him or herself fully from any downside price movement at the time the crops are ripe for harvest. In practice, this may require an aggregator (discussed in detail later) to be in place, through whom farmers can access the commodity markets.
- **Improved credit accessibility:** in the absence of a proper risk-management tool, banks are reluctant to fund primary producers (farmers). If they do, the interest rates are very high. The availability of futures markets and hedging facilities reduces the risk perception, and banks are willing to provide easy credit to farmers.

Issues

Benefits of futures trading that can accrue to farmers have been discussed above. However, there are a few serious problems relating to the use of futures markets by farmers. These are discussed below.

The minimum lot size of transactions in commodity futures market is often too large for an individual farmer. For example, the minimum size of a pepper contract in the India Pepper and Spice Trade Association is 2.5 MT (at US\$2.27 per kg, this will entail an exposure of about US\$6,000). Similarly, the lot size of trading of cotton contracts in the East India cotton association, until recently, used to be 55 bales, which is equivalent to nearly 10 tonnes of cotton.

Often a standard grade is used to design the futures contract and is used as a benchmark grade as a proxy for hedging, assuming the premium/discount for the actual grade supplied by the farmer

would remain constant; but this premium or discount may fluctuate, creating ‘basis risk’, which cannot be hedged by the farmer.

Futures transactions need the payment of an upfront margin and, depending on subsequent price behaviour, there are daily ‘mark-to-market’ margin requirements by the exchanges until the settlement date. Such conditions (which are essential to avoid any incentive to default on the part of futures market participants) may impose a financial burden on the farmer before the contract expires.

On the settlement date, if the farmer decides on the use of the physical delivery route to settle the contract, the farmer has to move the produce from his village to the designated warehouse, at his cost. At the current stage there is a lack of accredited warehousing facilities in and around the villages, and transport to a designated warehouse can impose significant costs.

Hedging through futures is a complicated financial product, and a farmer may not understand all the implications of transactions on the commodity exchanges. In comparison, hedging through the use of put options (giving producers the right to sell at a predetermined price, on payment of an initial premium) is a simple concept to understand. While, on the one hand, it protects farmers against the risks of downward price movements, on the other hand farmers are able to take benefit from an upward movement in prices, by simply letting the put option lapse. Also, unlike the case with futures, there are no margin calls and the farmers do not have to arrange any interim finance. Therefore options are superior price-hedging instruments when compared with futures. Currently ‘option’ contracts are not permitted in the Indian commodity markets.

The benefits of futures markets have so far remained confined to traders and processors in various commodities, and have not reached average independent producers (farmers), except in cases where farmers have participated in futures trading through federated cooperatives, such as the National Dairy Development Board. There is a need to evolve suitable mechanisms for extending the benefits of futures trading to farmers.

Concept of aggregators

The concept of ‘aggregators’ could be one of the alternatives to bring the benefits of futures trading to farmers. As mentioned, a typical transaction lot in commodity derivative markets is too large for an individual small farmer. In addition, there are infrastructure and connectivity costs, which an individual farmer may not be in a position to absorb. While individual farmers would benefit from the price-discovery process and would be in a better position to negotiate the sale price of their produce, they would need the services of an aggregator to access the commodity markets. In this context, there is an imperative need for an entity for consolidating individual farmers’ requirements and for allowing them to hedge, in a consolidated manner, all their needs on the exchange’s platform. This aggregator would aggregate the produce of different farmers and provide the required logistical services, including transportation, testing and grading, interaction with warehouse, and finally, commodity exchanges. We can consider one or more of the following entities to act as an aggregator for farmers:

- agro-extension service provider
- producers’ cooperative federation
- corporate that uses the end product

- bank branch
- agriclinic/agribusiness centre.

The role of user industries (agro-processing industries as aggregators) creates an inherent conflict of interest with the farmers' interest, as regards the price payable. Further, given the existing state of affairs at the cooperative or agro-extension service providers, a significant amount of hand-holding would be required to enable cooperatives to take up the role of aggregators. In this context, banks appear to be very well placed. On the one hand, with their existing branch networks in rural areas, they have substantial reach with farmers and enjoy credibility with the farming community; on the other hand, they are well positioned to take appropriate steps to carry out risk management after writing hedging products for individual farmers. A suitable policy framework needs to be developed for this purpose. Perhaps especially designated bank branches in rural areas (on the lines of SSI specialised branches) may have to be set up, and the personnel may be given the necessary training/support to perform the role of aggregator.

Warehouse receipt system in India

Need

The prices of agricultural commodities are also influenced by their qualities, grades, seasons of production, quality of storage and warehousing. The commodities are also bulky, involving difficulties in transportation, which affect spatial integration. These issues can be addressed by introducing a nationwide warehouse receipt system. Under this system the warehouses, which meet the prescribed standards of storage, preservation, testing, grading and certification, would be licensed by the central regulatory authority and the warehouse receipts issued by these warehouses would become negotiable.

The central regulatory authority would evolve the system of inspection, monitoring and surveillance to ensure the licensed warehouses comply with the prescribed standards, and that warehouse receipts issued by them truly reflect the quality, quantity and the ownership of the goods. Commodity exchanges could create a market place for trading and settlement of warehouse receipts to facilitate hassle-free trading in commodities. This would improve the collateral value of the goods and, consequently, the credit flow to the commodity sector. This would obviate the need for distress sale by the farmers, and even by some of the mills, who do not have waiting capacity due to inadequate liquid assets necessary for meeting the immediate consumption/working capital needs.

Current status

The government recognises the importance of separate legislation on accreditation of warehousing facilities, and this is in the process of being drafted and placed before the legislature. In the meantime, individual commodity exchanges, primarily the multi-commodity exchanges, have taken the lead and have begun empanelling warehouses in different areas. The NCDEX has taken a further lead in setting up a separate entity, which is expected to accredit warehouses and monitor their working (Annual Report, 2004-05). A few exchanges have begun accepting warehousing receipts for settlement and margin requirements. Independent assayers are attached to the approved warehouses, to ensure the seller is delivering the commodity as per the quality mentioned in the contract.

It is important that the proposed legislation on warehousing receipts should ensure these receipts are secure, freely transferable collateral, and rights and obligations of various parties to

warehouse receipts are well defined. The prospective recipient of a warehouse receipt should be able to determine the existence of prior claims and, once he receives it, he should be first in line to receive the stored goods. A reliable warehouse receipts system would also need reliable warehousing certification, guaranteeing basic physical and financial standards.

Working group on warehouse receipts and commodity futures

NABARD was associated as a member of the working group of RBI on warehouse receipts and commodity futures during 2004-05. The working group was entrusted with the task of evolving broad guidelines, criteria, limits, risk-management systems and also a legal framework to facilitate participation of banks in the commodity (derivative) market. The group was also asked to suggest enabling measures, including necessary statutory amendments to impart negotiable status to warehouse receipts, to encourage the flow of institutional finance to farmers.

The working group has submitted its report. The report examines the existing situation, furnishes relevant international experience, and suggests a possible course of action on various issues. The group has recommended that banks may be permitted to offer futures-based products to farmers to enable them to hedge their price risk. To enable banks to offer such products, the group has recommended that banks may be permitted to have proprietary positions in agricultural commodities within certain prudential limits.

Conclusions

India differs from most other countries in the world, in having a substantial agriculture sector. There is clearly a great opportunity for India to vastly increase value addition in agriculture through a more liberalised policy regime. Commodities futures have a very important role to play in discovering prices and providing market-based instruments for risk management. They help farmers by ensuring price dissemination, providing a platform for hedging and facilitating better access to credit. There is immense potential for development of commodity futures markets, as India is one of the leading producers of many agricultural and horticultural crops. However, there are several impediments that hinder the development of agricultural futures markets. These are poor liquidity, low number of active trading members, poor infrastructure, existence of illegal markets, and lack of awareness about their functioning among the stakeholders. These impediments pertain mainly to regional commodity exchanges. So far, the benefits of futures trading have remained confined to traders. There is a need to ensure that farmers also receive the benefits of commodity futures trading. For this to happen, the appointment of some intermediaries to act as 'aggregators' will have to be explored. For the development of commodity futures trading, it is important that the spot markets are free and transparent, there is participation by banks and financial institutions to improve liquidity of these markets, and illegal markets are effectively controlled.

Legal framework: physical delivery of commodities in terms of futures contracts listed on the Johannesburg Stock Exchange

Louis Cockeran (SAFEX, South Africa)

The Agricultural Markets Division (AMD) of the erstwhile South African Futures Exchange (SAFEX) was founded in 1995 after deregulation of the agricultural markets, to allow the parties directly involved with commodities to reduce the risk of price volatility in producing, merchandising or processing the commodities. Previously, the Marketing Act (59, of 1968) required all producers to sell their commodities for a fixed price to one board in the interests of market stabilisation. The producers were not at risk of non-payment by the board, and the farmers indirectly controlled and owned the silos. As a result of the deregulation process, all marketing legislation was repealed by the Marketing of Agricultural Products Act (47, of 1996) and single-channel marketing was abolished. The cooperatives became limited companies and the producers consequently did not have the same level of control over the cooperatives.

SAFEX was acquired by the Johannesburg Stock Exchange (JSE) Securities Exchange South Africa during July 2000. The AMD is now the Agricultural Products Division (APD) of the JSE. Agricultural commodities in South Africa are currently traded on the cash (spot) market as well as on the APD. The commodities currently traded on the APD are white and yellow maize, wheat, soybeans and sunflower seeds. This paper deals specifically with the delivery procedures and potential problems for buyers and sellers of commodities on the APD.

The APD is a part of the derivatives division of the JSE, and is a financial market as defined in section 1 of the Financial Markets Control Act (FMCA; 55 of 1989). The APD is a market for the business of buying and selling financial instruments taking place on an exchange. The financial instruments traded on the APD are futures and option contracts (defined in section 1 of the FMCA).

Section 1 of the FMCA defines the rules in relation to the financial market as the rules of that exchange referred to in section 17 of the FMCA. The existence of rules (as contemplated in section 17) of a financial market is a precondition for the issuing or renewal of a financial market licence (sections 9 and 17 of the FMCA). Different categories of membership are established in terms of the JSE derivative rules (see below). The derivative rules make provision for clearing members and non-clearing members in the derivatives division. The definitions of the various classes of membership appear in section 2.10 of the derivative rules. A non-clearing member is any member who is not a clearing member but is either a broking or non-broking member of the JSE. A clearing member is defined in section 2.10 of the rules as a member who has entered into a clearing house agreement with the clearing house (see below).

Rules of the derivatives division of the JSE

The derivative rules of the JSE are promulgated in terms of the FMCA. Section 17(6) of the FMCA stipulates that the provisions of any rule made under this section shall be binding on all members and representatives of members and on every person utilising the services of a member or who concludes a transaction with a member in the course of that member's business. Section 1.50.2.3 mirrors the FMCA and postulates that the derivative rules shall be binding on any person utilising the services of a derivatives member, or who concludes a transaction with a derivatives member in the course of that member's business.

Section 1.60 of the derivative rules stipulates that every transaction in listed products entered into by a member and another member, and a member of the public, is entered into subject to the provisions of the FMCA, the derivative rules, the JSE directives and the decisions of the board in force at the time the deal was struck.

Section 2 of the derivative rules contains interpretation and definitions and I will briefly quote some of the definitions applicable to this paper:

- 'agricultural commodity' means an agricultural product as defined in the Marketing of Agricultural Products Act 47 of 1996
- 'agricultural commodity contract' means an agricultural commodity futures contract or an agricultural commodity option contract
- 'agricultural commodity futures contract' means a futures contract the underlying instrument of which is an agricultural commodity
- 'agricultural commodity option contract' means an option contract, the underlying instrument of which is an agricultural commodity futures contract
- 'agricultural products market' means the market operated by the JSE in terms of the Act (FMCA) to facilitate trading in agricultural commodity contracts
- 'clear' means the process in terms of which the clearing house becomes the buyer from the seller and the seller to the buyer in every trade whereupon the clearing member (derivatives) guarantees to the clearing house all obligations arising out of any position resulting from such trade in terms of these derivatives rules
- 'clearing house' means SAFEX clearing company (Pty) Ltd or any other body corporate or unincorporated association or department of the JSE designated by the JSE as such and recognised by the registrar of financial markets as a clearing house in terms of the FMCA
- 'clearing house agreement' means a written agreement entered into between a clearing member (derivatives) and the clearing house, in terms of which the clearing member (derivatives) guarantees to the clearing house all of the obligations arising out of his proprietary positions, the positions of his clients, the proprietary position of the non-clearing members (derivatives) with which he has entered into a clearing agreement, and the positions of the clients of such non-clearing members

- ‘contract specification’ means the standard terms and formal requirements of a futures or option contract contemplated in the definition of standardised contract in section 1 of the FMCA, as determined from time to time by the JSE.

Section 7.170 of the derivative rules deals with rules of trading that are particular to the physical delivery of agricultural commodity contracts and will be dealt with in more detail below.

The contract unit, in terms of the standard futures contracts, is defined in clause 2 of the contract specifications. For the purposes of this document, I will mostly refer to the maize contracts and silo receipts, as they constitute the vast majority of trades on the APD. The principles applicable to the other commodities are, however, exactly the same, due to the fact that the contract specifications, rules and terms of the silo receipts are identical in respect of each commodity.

The contract unit of a maize (white or yellow) futures contract is 100 metric tons, a wheat and sunflower futures contract 50 tons, and a soya futures contract 25 tons, and silo receipts are similarly issued in denominations of 100, 50 or 25 tons, as the case may be.

The procedure for delivery of the commodities on the APD is defined in clause 1.7 and appendix F to the contract specifications, and delivery is effected by the submission of a delivery notice on or before the last trading day (expiry day) followed by delivery of the original silo receipt on the APD on the following day (delivery day).

There have been approximately 90,000 SAFEX silo receipts issued since the inception of the AMD, and the receipts have been used for trading in commodities on the APD as well as the spot market. The delivery process is discussed below.

Issuing a SAFEX silo receipt

For the purposes of this paper, it is assumed that the farmer owns the land on which his or her crops are planted, and that he or she is the owner of the maize on the basis of *plantatio et satio* (Van der Merwe, 1989) and that when the farmer reaps the crop he or she remains owner of the harvested commodity. Producers of maize (or any other commodity) will deliver their produce to a silo as it is harvested on their lands. They will, for example, deliver 5 tons on one day, 10 tons on the next, and so forth. After each delivery, the silo owner will issue a receipt that states the quantity and quality held on behalf of the producer. This receipt is used as proof of delivery by the producer, and confirms the receipt of the commodity by the silo owner. The producer can, at any time, sell his or her produce by delivery of those receipts to prospective buyers, and the receipts will enable the buyer to obtain the goods purchased.

If two or more producers deliver maize to the same silo, the maize is intermingled in such a manner that it is no longer possible to distinguish or physically separate that depositor’s maize from any other maize of the same quality held at the silo. The commodities have been the subject of *commixtio*. This has to be distinguished from the concept of ‘mingling’, which signifies *confusio* and occurs in the case of liquids and metal alloys (Van der Merwe, 1989).

When solids, for example grain, belonging to two or more persons are mingled in such a manner that identification of the grain that originally belonged to them is impossible, the mixture belongs

to them jointly, provided mixing took place by consent.²¹ It is important to note that the wording on the SAFEX silo receipt expressly records that the silo owner is not the owner of the product and that his sole right thereto is a lien for his storage and handling charges.

Less than 50% of all commodities delivered to the silo industry in South Africa is covered by SAFEX silo receipts and the remainder is covered by the silo owner's own form of receipt. The silo owners are almost invariably the owners, in their own right, of certain of the commodities stored in their silos.

The receipt

The farmer will keep delivering grain at the silo, and when he has delivered 100 tons of white or yellow maize he may request the silo owner to issue a SAFEX silo receipt in his name. The SAFEX silo receipts are sequentially numbered and forwarded to each silo owner by courier. The silo owner issues an original silo receipt to the owner of the grain in question. The silo owner keeps a copy for his records and another copy is forwarded to the APD by courier.²² The SAFEX silo receipt has unique security features, consisting of a hologram and distinct watermark. The receipts are individually numbered, and the APD keeps a record of receipts issued. These security features, coupled with the retention of the two copies by the silo owner and the APD, make it virtually impossible to forge a receipt or to obtain grain by producing a forged silo receipt. There has not been any forgery of a SAFEX silo receipt to date. A SAFEX silo receipt is a receipt that is issued by an approved silo owner in the form as set out in Appendix B to the contract specifications and on the terms set out in the various futures contracts.

One of the characteristics of a thing (therefore a characteristic of moveable goods such as grain) is individuality.²³ The grain deposited in a silo by depositors lies undivided in the containers, and many silo receipts are issued to the depositors. The grain deposited by each depositor loses its characteristic of individuality and therefore ceases to exist as a separate thing. All depositors of the grain and subsequent holders of the receipts agree to this practice expressly or implicitly by usage, as all market participants are aware that their grain will not be stored in a separate silo or container, but will be stored with grain belonging to various other parties. The grain deposited has therefore been mingled by consent, and the mixture belongs to all the owners jointly.²⁴

The contract specifications and directives of the JSE, however, state that the depositor of the maize, to whom a SAFEX silo receipt is issued, remains the owner of the maize covered by the receipt. This position is contrary to the common law principles, stated previously, that would suggest that the holder of a SAFEX silo receipt is a co-owner of the maize in the silo together with the silo owner (if the silo owner has its own grain stored in the silo) and all other depositors of maize in that silo. The wording of the receipt clearly states that the silo owner is not the owner of the product 'solely, jointly or in common with others'. This proposition has however, not been tested by our courts, and it is doubtful whether the wording of the receipt (terms of a contract)

²¹ Silberberg and Schoeman, 1992. *The Law of Property* 222; Voet 41 1 23: 'If it (a mixture of dry stuff) takes place by the wish of the owners, that which has been mixed is rendered common.' Translation by Gane *The selective Voet being the commentary on the Pandects* (1957) 207.

²² See Appendix E to the contract specifications titled 'Procedures for Issue, Transfer, Delivery and Presentation of Safex silo receipts'.

²³ Van der Merwe, 1989; Du Toit *The Bill of Lading in South African Law* (LLD Thesis RAU 2000) 127.

²⁴ Van der Merwe, 1989.

will amount to an amendment of the common law. In my opinion, the terms of the contract specifications and silo receipt amount to nothing more than a contractual undertaking between the parties not to exercise their right of co-ownership in terms of the law of property. The terms of the agreement between the parties do not amount to an amendment of the principles of substantive law applicable to the rights of the parties.

The holder of a silo receipt is therefore the joint owner of the mixture of grain stored in the silo. If, as a result of the continuous circulation of grain in a silo, the grain covered by the silo receipt is no longer in the container where it was deposited, and this silo receipt is transferred to the seller, no transfer of ownership can take place, as one person cannot be owner of one part of a thing and another owner of another part of the same thing.²⁵ The seller of the grain cannot be in possession of a part of a moveable thing, and consequently cannot be in possession or transfer ownership of the grain stored in a silo, as the grain sold does not comply with the characteristics of a thing.²⁶ The holder of the receipt can, at most, have a personal right for delivery of a similar quality and quantity of grain covered by the receipt.²⁷

It is interesting to note that, in English law, the sale of goods Act of 1979²⁸ stipulates that where the buyer of goods forming part of a bulk has paid the purchase price, the property in an undivided share in the bulk is transferred to the buyer and the buyer becomes an owner in common of the bulk. If the undivided shares in the bulk exceed the whole of the bulk, the undivided share of each buyer shall be reduced proportionally.²⁹ South Africa will have to promulgate similar legislation to amend the common law principles discussed in this paragraph.

The SAFEX silo receipt contemplates that a person, the depositor, deposited a certain quantity and quality of maize with a silo owner. The silo owner will issue a SAFEX silo receipt to the depositor. This silo receipt records certain contractual obligations between the silo owner and the holder of the receipt and the transferor and transferee. It is clear from the wording of the receipt that it is within the contemplation of the depositor and the silo owner that the depositor may transfer his rights and obligations, specified in the receipt, to a transferee.

There is also an entirely different contract contemplated by the SAFEX silo receipt, namely a futures contract relating to the sale of maize at a future date. This contract makes provision for a form of constructive delivery of the grain by the delivery of SAFEX silo receipts for the commodity specified in the contract. It has to be noted, however, that not all SAFEX receipts are utilised to deliver commodities in terms of a JSE listed futures contract, and that some of these receipts are merely used to sell commodities on the spot market. The parties appearing on the face of the receipt (except the short and long position holder in terms of a JSE futures contract) will not be bound by the rules or terms of the contract specifications of the JSE, as they do not fall within the ambit of section 17(6) of the FMCA or section 1.50.2.3 of the derivative rules. The terms appearing on the face of the silo receipt will be part of the terms of the agreement between the buyer and seller of the maize in question, even if the receipt is not utilised to fulfil a JSE futures contract.

²⁵ Du Toit 127, Van der Merwe 26.

²⁶ Du Toit 127.

²⁷ Du Toit 127–128.

²⁸ S 20A (1)–(2).

²⁹ S 20A(4) and Du Toit 128–129.

The silo owner's own receipt

The producer can also ask the silo owner to furnish him with the silo owner's own receipt, but this receipt may not be utilised for delivery in terms of a futures contract listed on the APD. Financial institutions are loath to accept these receipts as security for financing loans to producers. The silo owner's own receipt is, however, proof of delivery of the quantity and quality of grain delivered by the producer.

Who may issue a SAFEX silo receipt?

The SAFEX silo receipt can only be issued by SAFEX-approved silo owners. There are currently 200 delivery points (silos) in South Africa. This is quite unique in terms of world standards, as the Chicago Board of Trade, for example, has only three delivery points. The silo receipt may be freely transferred, and quite often will have the names of many prior holders endorsed on the receipt.

Physical delivery of a commodity on the APD

Physically settled futures contracts

All products on the APD are physically settled futures contracts. In terms of this contract, a person agrees to deliver the underlying instrument to, or receive it from, another person at an agreed price on a future date.

The physical delivery of the underlying product is effected by delivery of the silo receipt on SAFEX. Valid and acceptable delivery will only be accomplished if the delivery of the SAFEX silo receipt enables the purchaser to take possession of the underlying commodity. The seller of the grain on SAFEX is referred to as the short position holder and the buyer is referred to as the long position holder. The delivery procedure is set out in clause 1.7 of the contract specifications and the detailed delivery procedure is described in Appendix F to the contract specifications. The method of physical delivery is described in clause 1.7 (a) of the contract specifications :

'A short position holder who wishes to make delivery in satisfaction of a futures contract shall provide the JSE through a clearing member (derivatives) with a delivery notice. The delivery notice shall be assigned by the JSE to a long position holder as described in paragraph (f) below. The JSE shall notify the clearing member (derivatives) representing the long position holder of the delivery which has been assigned, and shall furnish the clearing member (derivatives) representing the short position holder with the name of the clearing member (derivatives) obligated to accept their delivery.'

Delivery by a short position holder to an assigned long position holder shall take place through delivery to the JSE of SAFEX silo receipts on a delivery day, subject to compliance with all terms of this contract specification.'

Obligations of the parties to a futures contract

The holder of every short position in an agricultural futures contract on expiry has an obligation to make delivery of the underlying agricultural commodity at the expiry price. The holder of every long position in an agricultural futures contract on expiry has an obligation to take delivery

of the underlying agricultural commodity at the expiry price. The clearing house, by substitution in terms of the definition of ‘clear’, becomes buyer to every seller (short position holder) and seller to every buyer (long position holder).

The short position holder effects delivery of the underlying agricultural product by delivery of a silo receipt to the APD and the silo receipt is randomly allocated to a long position holder by a computer generated random allocation process.

It is clear from the rules, as well as the contract specifications, that the short position holder has the responsibility to deliver the underlying commodity reflected in the silo receipt. This delivery is effected by delivery of the silo receipt to the APD. If, however, the long position holder is unable to obtain the underlying product through presentation of the silo receipt, the short position holder has not ‘delivered/settled’ as defined in the rules, and the short position holder will then be in default. This would occur if, for example, there is no grain in the silo, or a court order prevents the holder from obtaining the grain reflected in the receipt.

Risk management structure of the JSE

In terms of the risk management structure of the JSE and the rules pertaining to default, the member will stand in for its clients’ obligations, and the clearing member will guarantee its members’ obligations. In the event of a receipt delivered on the JSE that does not allow the long position holder to get delivery of the underlying product covered by the receipt, the APD will request the short position holder to furnish it with a replacement receipt or to cash settle the transaction (if the long position holder consents to a cash settlement). The long position holder is entitled to demand delivery of the grain in question, and, if they refuse to accept a cash settlement, the short position holder has to furnish replacement receipts.

High Court applications at the end of 2000

The SAFEX silo receipts were used to effect delivery of the underlying product for 5 years without any incidents. During the end of 2000, however, the High Court granted interdicts that prohibited the delivery of the grain in respect of two SAFEX silo receipts. The applications were heard prior to the acquisition of SAFEX by the JSE and the rules and contract specifications were, apart from certain amendments alluded to in this paper, identical. I will therefore use the terminology of the JSE and SAFEX interchangeably. These applications are the only instances where a SAFEX silo receipt was the subject matter of the courts’ scrutiny. The facts and judgements are discussed briefly in the following paragraphs.

Application brought by Zandveldt Graanbemarking CC (‘Zandveldt’)

This matter was heard by Hancke J. on 6 December 2000. The Court granted a temporary interdict in the form of a rule nisi calling on certain parties to give reasons why they should not be forbidden from delivering certain grain, which was the subject of certain silo receipts. An order was also issued forbidding them to deal with the silo receipts. The receipts in question were both SAFEX receipts and the silo owner’s own receipts.

Some 30 parties (including Glencore – a client of one of the APD’s members) intervened in the action as respondents. Zandveldt’s case was that it was the owner of the grain covered by the relevant silo receipts. Zandveldt sold the grain covered by the receipts to one P. G. du Plessis, and contended that they withheld ownership until payment was made by du Plessis (the purchase

price was substantially higher than the market price). du Plessis took delivery of the grain by receiving the receipts and sold it to another party (at a price substantially lower than the market price). The grain covered by the SAFEX silo receipts was eventually sold to Glencore, a client of one of APD's members, who delivered the receipts in satisfaction of a futures contract. du Plessis received payment from his counterparty but failed to pay the purchase price to Zandveldt.

Glencore contended that they were the true owner of the grain in question, as the silo receipts were negotiable instruments. They alleged that they obtained the receipt in good faith, for value and without knowledge of their predecessor's defective title. Alternatively, they contended that Zandveldt should be stopped from asserting their ownership, as they created the impression that they passed ownership of the grain in question to P. G. du Plessis.

The High Court discharged the temporary order on the return day on procedural grounds, as Zandveldt did not prove a clear right on the grain in their founding affidavit. The order was only discharged in respect of the grain covered by the SAFEX silo receipts and the matter was referred to trial for adjudication on the grain covered by the other receipts. The Court did not make a finding as to the legal nature of a silo receipt (SAFEX or otherwise) or the validity of Glencore's contentions mentioned in the preceding paragraph.

Application brought by FS Graanbemarking CC³⁰ ('F. S. Graan')

This matter was heard by Hancke J on 6 December 2000. F. S. Graan filed an application against certain parties (including P. G. du Plessis) and obtained a temporary interdict in the form of a rule nisi that called on the respondents to give reasons why they should not be forbidden from delivering or dealing with certain grain, which was the subject of SAFEX and other silo receipts. This was a separate application to the Zandveldt matter but it was heard on the same days. Louna Intex (Pty) Ltd intervened, and applied for an order declaring that it was the owner of grain covered by the receipts.

F. S. Graan sold grain to P. G. du Plessis (at a price significantly higher than the market price) and P. G. du Plessis, in turn, sold the grain covered by the receipts (at a price lower than the market price) to other parties. The grain covered by the SAFEX receipts was eventually sold to Glencore, a client of one of the APD's members, who delivered the silo receipts in fulfilment of their obligations in terms of a futures contract. F. S. Graan asserted that its sale to du Plessis was a cash transaction, and that, due to the fact that he failed to pay the purchase price, ownership of the grain in question remained vested in them.

Glencore raised the same defences to F. S. Graan's claims of ownership that they raised in the Zandveldt matter, and the court also did not make a decision as to the validity thereof.

On the return day of the rule nisi, the court discharged the temporary order in respect of the grain covered by the SAFEX silo receipts, on the grounds that F. S. Graan did not show a clear right in their founding affidavit. The court further dismissed Louna's claim of ownership. The dispute regarding the remainder of the grain covered by the other receipts was referred to trial. Due to the fact that the temporary order was not confirmed on procedural grounds, the court did not make any decision as to the legal nature of silo receipts.

³⁰ *F. S. Graanbemarking C.C. v. Charl Venter N.O. and others*, OPD, case number 3497/2000, judgement delivered on 18 January 2001 (unreported).

Consequences for the JSE

Glencore sold the grain covered by the silo receipts on the APD, and the receipts were randomly assigned by the JSE to a long position holder. Glencore was paid for the grain sold, but the long position holder could not obtain delivery of the grain, as temporary interdicts were granted that prevented them from obtaining delivery of the grain. The clearing house, by substitution, became a party to the transaction, and the long position holder insisted that the clearing house deliver a similar amount of grain covered by the interdicted silo receipts or, alternatively, cash settle the transaction.

The default procedure

It is clear from Section 12.10.1 of the derivative rules that Glencore was automatically in default, from the moment that they failed to fulfil their obligations in terms of a trade or position as defined in section 12.10.1 of the rules. Due to the fact that 'default' is a factual state of affairs, the short position holder was automatically in default, when the long position holder was prevented from obtaining physical delivery of the maize. Glencore had, therefore, not 'delivered/settled' and the mere delivery of silo receipts was not a fulfilment of the short position holder's obligations as defined in the rules and contract specifications.

Glencore and its broking member, Peregrine Equities, initially undertook to furnish SAFEX with replacement receipts that would enable the long position holder to obtain physical delivery of the commodity purchased from SAFEX. They reneged on their undertaking, and SAFEX had to cash settle with the long position holder as SAFEX had, by substitution, become seller to the long position holder.

The broking member refused to initiate the default procedure against their client, and SAFEX was forced to cash settle with the long position holder. If the default procedure had been properly followed, the member would have had to stand in for its client's obligations, and deliver replacement receipts to the AMD or cash settle the transaction. The member, however, informed SAFEX management that they would only stand in for their client's obligations, if their client was 'placed in default'. The stance of the member was, in the opinion of the JSE, incorrect, as default is a factual state of affairs, Glencore was in default, from the moment when it could not give delivery of the underlying commodity. The executive committee of SAFEX then placed the client in default, and the member had to stand in for its client's obligations.

The delay in initiating the default procedure described in the previous paragraphs will not be repeated, as the new rules state that a client shall default if the JSE, in its sole discretion, considers that the client has defaulted (Section 12.10A.2 of the derivative rules).

Issues arising from the High Court applications

A client's obligations as defined in the rules

The stance of the JSE member and its client that the client had fulfilled its obligations by the mere delivery of receipts was particularly worrying, as the clearing house guarantees each transaction by standing in for the long and short position holder's obligations. This stance is also contrary to the rules of the JSE. The member's client also maintained that the receipts were negotiable instruments. This would not have been problematic if the member had immediately

initiated the default procedure and stood in for its defaulting client's obligations, as replacement receipts would have been delivered, and the member would have had to resolve the matter with its client. This problem is now sufficiently addressed by the contents of section 12.10A.2 as: the JSE may initiate the default procedure if a client is in default and the member failed to follow the default procedure.

The facts leading up to the High Court applications

In both the High Court applications, the producers allowed a receipt to be issued in P. G. du Plessis's name without obtaining payment for the grain covered by it. When they realised that they had taken a risky business decision, and that du Plessis had no intention to pay the purchase price, and that he was the proverbial 'man of straw', the only remaining alternative was to claim that it was a cash transaction, and that they reserved ownership of the commodity sold to du Plessis. The facts presented to the court in the application for an urgent interdict were sufficient to convince the court to grant interim relief pending the adjudication of the dispute. The previous wording on the SAFEX silo receipt stated that the transferor certifies that he is the owner of the product covered by the receipt and, other than the silo owner's lien shown on the face of the receipt, there are no liens or other encumbrances on the product. The wording of the receipt did not preclude a prior holder of the receipt from reserving ownership of the grain in question. The applicants asserted that it was a cash transaction, and that they reserved ownership of the grain covered by the receipts, and they therefore succeeded in obtaining interim relief.

The time delay in releasing the grain caused by the temporary interdicts

In the two applications, the grain covered by the SAFEX receipts was released at the conclusion of the legal proceedings, but the delay caused by the temporary interdicts, coupled with the member's reluctance to initiate the default proceedings immediately, forced the clearing house to cash settle the long position holder. The clearing house was reimbursed (including interest) by the member, after its client was placed in default. It was clear that the litigation was not instituted, because of the wording on or legal status of the SAFEX silo receipts. The sole cause of the litigation was the producer's decision to issue the receipt in the name of a buyer without obtaining payment. The JSE, nonetheless, then embarked on a process to minimise the risk of these events being repeated. The JSE considered the legal status and principles applicable to warehouse (silo) receipts in other countries, and adopted certain measures that were best suited for the South African market.

The legal principles relating to the negotiability of silo receipts were of particular importance, as this would be one of the ways to protect a bona fide purchaser against eviction by a previous holder of the receipt. If the SAFEX silo receipts were indeed negotiable instruments, Glencore (and the JSE) would have obtained good title to the receipts notwithstanding their predecessor, P. G. du Plessis's defective title.

Negotiable instruments in South African law

The definition of a negotiable instrument

In South African law a document is only negotiable if it is so defined by statute or by trade usage and custom.³¹ The bills of exchange Act³² regulates bills, cheques and notes. It is obvious that a SAFEX silo receipt does not fall within the ambit of the definitions of a bill, cheque or note as postulated in this Act,³³ as it is neither an unconditional order in writing to pay a sum certain in money, a bill drawn on a banker payable on demand or a promissory note.

Negotiable instruments are traditionally described as instruments which, in the same way as cash, are transferable by delivery or by delivery and endorsement, and on which the holder is entitled to sue in his own name.³⁴ Negotiable instruments have the following characteristics: the rights embodied in the instrument may be transferred by delivery (and endorsement if necessary), the *bona fide* transferee for value acquires a good and complete title to the instrument, and the rights embodied therein, and the holder can sue on the instrument in his own name.³⁵ The traditional test, to determine whether a document is a negotiable instrument, is, therefore, whether the instrument, by custom of trade, is transferable like cash by delivery, and capable of being sued upon by the person holding it *pro tempore*.³⁶

The following is one of the definitions of a negotiable instrument that has been formulated:

‘A negotiable instrument is a document of title embodying rights to the payment of money or a security for money, which, by custom or legislation, is a) transferable by delivery (or by endorsement and delivery) in such a way that the holder *pro tempore* may sue on in his own name and in his own right, and b) a *bona fide* transferee for value may acquire a good and complete title to the document and the rights embodied therein, notwithstanding that his predecessor had a defective title or no title at all.’³⁷

Good faith must exist at the time when value is given, as well as at the time when the instrument is transferred.³⁸

The title of a *bona fide* holder for value of a negotiable instrument is an original one and is an exception to the *nemo plus iuris* rule. In terms of this rule, a party cannot transfer better title than he himself has. A holder for value of a negotiable instrument does not obtain title subject to any defects in title of his predecessor, but his title is original and free of any defences that may have been invoked against his predecessor.³⁹ In this sense, ‘negotiate’ means to transfer in such a manner that a purchaser in good faith will acquire more rights to the instrument than his predecessor had, the so called ‘transfer free of equities’.⁴⁰

³¹ Cowen and Gering, 1985. *The Law of Negotiable Instruments in South Africa*, 150-157.

³² 34 of 1964.

³³ S 1, 2 and 87.

³⁴ Malan and Pretorius, 2002. *Malan on Bills of Exchange, Cheques and Promissory Notes*, 130.

³⁵ Du Toit 68.

³⁶ Du Toit 68- 69.

³⁷ Cowen and Gering 52.

³⁸ Cowen and Gering 58.

³⁹ Malan and Pretorius 131-132.

⁴⁰ Malan and Pretorius 6-7; Cowen and Gering 52.

If the silo receipts were indeed negotiable instruments, Zandveldt and F. S. Graan would not have been able to exercise their rights of ownership against P. G. du Plessis's successors in title, if the successors could show that they obtained the receipts in good faith, for value, and without knowledge of du Plessis's defects in title.

Negotiability by custom

The repeal of the Agricultural Warehouse Act⁴¹ had the effect that warehouse receipts were not negotiable by an act of parliament, and the question arose whether SAFEX silo receipts became negotiable by trade usage and custom.

A custom will be found to be established if it complies with the following requirements:⁴²

- it must have existed for a long time
- it must have been uniformly observed by the community concerned
- it must be reasonable
- it must be certain.

In the matter of *Golden Cape Fruits (Pty) Ltd v. Fotoplate (Pty) Ltd*,⁴³ Corbett J., stated that a person would be bound by trade usage, if it is shown to be universally and uniformly observed within the particular trade concerned, long established, notorious, reasonable and certain, and does not conflict with the positive law or with the clear provisions of the contract.

In order to prove that an instrument is a negotiable instrument by custom, it will be necessary to prove that an instrument possesses the essential characteristics of negotiability. Cowen⁴⁴ avers that there are only two essential characteristics of negotiability, it being the transfer of title by delivery, or delivery and endorsement, and the fact that a transferee of an instrument taken in good faith and for value acquires an original title free of underlying defences. The path to a ruling that silo receipts have become negotiable by custom is arduous and fraught with difficulty. The facts of the two supreme court applications show that it will be nearly impossible to prove that the custom has been uniformly observed: Zandveldt and F. S. Graan will claim that it is not a negotiable instrument and that they reserved ownership of the grain sold, and Glencore will claim that it is a negotiable instrument, that they obtained it in good faith, for value and without knowledge of any defects of their predecessor's title. The silo receipt is further not worded in the usual manner of a negotiable instrument.

The recognition of new categories of negotiable instruments by trade usage has not been argued before our courts. Cowen⁴⁵ postulated the following guidelines to be followed in such a query: firstly, to prove that a mercantile custom has been established; secondly to establish that the essential characteristics of negotiability are present; and thirdly to show some compliance with the requirements of form of the bills of exchange Act.

⁴¹ 42 of 1930.

⁴² *Van Breda v Jacobs* 1921 AD 330; *Catering Equipment Centre v Friesland Hotel* 1967 4 SA 336 (O).

⁴³ 1973 2 SA 642 CPD 642 on 645.

⁴⁴ Cowen and Gering 29, 32.

⁴⁵ Cowen and Gering 152.

It is clear from the above that silo receipts are not recognised as negotiable instruments in any statute in South African law at present. A court will probably find that a silo receipt is not a negotiable instrument by uniform custom or trade usage for the following reasons.

- The SAFEX silo receipt is not a negotiable instrument because it does not comply with the following requirements of a negotiable instrument: transfer of title by mere delivery, or delivery and endorsement; if the document is taken in good faith and for value, it is transferred free of underlying contractual defences.
- It would be very difficult to produce clear and convincing evidence to prove the trade usage and custom that made the receipt a negotiable instrument. It would, in fact, be impossible to prove that the custom has been consistently accepted by all parties.
- The maize market in general does not accept silo receipts as negotiable instruments.
- No precedent could be found in terms whereof an instrument containing anything other than money, or a security in respect of money, has been recognised as a negotiable instrument.
- The SAFEX silo receipt contains a number of conditions. Normally, negotiable instruments do not contain conditions.
- The Court would in all probability find that a silo receipt is a transferable document, but not a negotiable instrument.

It is therefore clear from the definition and requirements of negotiable instruments of South African law (and English law, upon which our law of negotiable instruments is based) that SAFEX silo receipts are not negotiable instruments, as the receipts do not comply with the requirements of a negotiable instrument, being the transfer of title by mere delivery or delivery and endorsement of the document taken in good faith for value, free of contractual defences.⁴⁶ There is, however, no authority in our law on the subject of warehouse receipts, whether negotiable or not.

The Agricultural Warehouse Act 42 of 1930 (South Africa)

The purpose of this Act was to provide for the establishment and licensing of warehouses for the storage of agricultural products, the issue of negotiable warehouse receipts as representing ownership or possession of agricultural products and for matters incidental thereto. In this Act, significant modifications in regard to the law of property, contract and negotiable instruments were introduced in relation to the storage of agricultural products in warehouses. The provisions of the Act reveal many similarities to the provisions of the Uniform Commercial Code of the United States of America. The Act as a whole was repealed in 1975, and its repeal was related to the fact that no producer of maize was entitled to sell maize, other than the maize board. It was therefore unnecessary to regulate the trading of maize at all. There has been no legislation promulgated after the demise of the maize board and there is at present no statutory provision relating to the legal status of silo receipts in general. The Act contained specific provisions regarding the negotiability of warehouse receipts, and receipts that complied with the requirements of the Act were indeed negotiable instruments. The proposed new legislation, in the form of the Grain Warehouse Act, was based, *inter alia*, on this Act, and it can still be used as a starting point for legislation covering silo receipts.

⁴⁶ *Impala Plastics (Pty) Ltd v. Coetzer* 1984 2 SA 392 (W).

Solutions adopted by the JSE

From a review of American, English and South African law that legislation is necessary to afford the status of a negotiable instrument to silo receipts and that the SAFEX silo receipts were not negotiable instruments. It is of vital importance to protect *bona fide* purchasers of grain covered by silo receipts in certain circumstances (as in the English sale of goods Act). The problems faced by the APD were, however, immediate and pressing and could not wait for legislation to be passed to address these issues. The parties involved in the grain industry have for the past few years discussed a proposed South African grain warehouse Act, and a draft has been prepared and discussed over the last five years. There has, however, been virtually no progress in the promulgation of this Act, and it is now virtually accepted that the chances of such an Act being passed are very slim indeed. Representatives of the JSE attended meetings where the proposed legislation was discussed; and the consensus of the interested parties present at the last meeting was that the proposed Act will probably never be passed by Parliament.

The JSE therefore addressed the issues by amending the wording of the silo receipts, contract specifications and rules. The JSE attempted to find solutions within the common law to afford protection for *bona fide* purchasers (such as the JSE) of commodities covered by SAFEX silo receipts. These amendments do not, and could not, solve all possible problems, but were a definite improvement, and were designed to foster discipline in the market.

In essence, the physical settlement of futures contracts on the APD amounts to the buying and selling of moveable goods. South Africa has an abstract system of transfer of property.⁴⁷ The abstract system differentiates between the judicial act that compels a person to transfer ownership of the thing and the act of transfer itself.⁴⁸ The abstract system therefore differentiates between the so called '*verbintenisskeppende ooreenkoms*' and '*saaklike ooreenkoms*'.

A seller who has sold goods is obliged to deliver possession of the goods to the buyer. The delivery required by law is the delivery of undisturbed possession. The seller also gives the buyer a guarantee against eviction; it is not necessary that the seller should be able to transfer ownership to the buyer, as the seller does not warrant the transfer of ownership, but merely warrants against eviction.⁴⁹ Possession has two elements: the element of detention, being physically able to deal with the goods to the exclusion of others, and the mental element, being the intention of dealing with the goods as his own.⁵⁰

Actual delivery of the goods is not necessary; there can instead be constructive or symbolic delivery, where the purchaser is supplied with a symbol which will enable him to take the property into his physical possession⁵¹, for example, keys to a motor vehicle, and bills of lading. The mere transfer of a symbol is not sufficient, the symbol must enable the transferee to exercise control over the goods.⁵² The requirements of symbolic delivery are as follows⁵³:

- the parties must have the intention to transfer possession by symbolic delivery

⁴⁷ *Commissioner of Customs and Excise v. Randles Brothers & Hudson Ltd* 1941 AD 369 on 389–399 and 411

⁴⁸ Van der Merwe 16.

⁴⁹ MacKeurten *Sale of Goods in South Africa* (1984) 65-67.

⁵⁰ MacKeurten 67.

⁵¹ *S v Buitendach* 1980 2 SA 152 T on 154 A–G.

⁵² Van der Merwe 315- 316.

⁵³ Van der Merwe 316.

- the keys must be delivered with the intention that the contents of the warehouse are thereby transferred
- the keys must supply the transferee with exclusive control over the contents of the warehouse.

Amendments to the wording of the silo receipt

Due to the fact that a silo receipt is not a negotiable instrument, the *nemo plus iuris* rule applies and the seller cannot transfer better title to a purchaser than he himself in fact had. It further means that a bona fide purchaser for value (such as the JSE and other purchasers in good faith) will have to rely on the doctrine of *estoppel* to defeat any claim by another party claiming that it is entitled to the receipts or the products reflected thereon.

Estoppel is a remedy based on the principles of equity. If a person created the impression that he is the true owner of a thing, or that he is entitled to dispose of it, and a third party, relying on that impression, acted in good faith to his detriment, the owner is, in terms of the doctrine of estoppel, precluded from exercising his rights of ownership⁵⁴. This statement is subject to the qualification that, in certain cases, a representor will only be estopped to assert his rights of ownership if there was fault on his part.⁵⁵

The short position holder (seller) on the APD has to give possession of the maize to the long position holder (purchaser) and must also entrust the indications of the ownership or rights of disposal of the commodity in question.⁵⁶ In the case of commodities, it is the delivery of a SAFEX silo receipt. An owner might also be estopped from asserting his rights to the commodity, where, even though he has not been negligent, he is precluded from asserting his rights by compelling considerations of fairness.⁵⁷

The wording of the previous silo receipts did not preclude a seller from alleging that he reserved ownership of the grain sold, and it would therefore have been necessary to prove that he, by his acts or omissions, created the impression that he intended to transfer ownership. It was therefore decided to amend the wording on the silo receipt, to strengthen a defence based on estoppel, and to clarify the status of the silo receipt. The following measures were introduced:

Silo receipt utilised as symbolic delivery

The contract specifications were amended to state that the silo receipts were transferable documents utilised as symbolic delivery of the commodity covered by it. The silo receipt is therefore legal delivery of the underlying product, because it gives the buyer the ability to obtain control of the grain (similar to symbolic delivery of a motor vehicle by delivery of the keys). The silo receipt enables the holder to exercise control over the commodity, and possession of the commodity can be transferred by delivery of the silo receipt, with or without endorsement. The duty of the short position holder is therefore to effect delivery of the underlying product by the delivery of silo receipts that will enable the long position holder to obtain possession of the grain. The holder of a silo receipt cannot contend that it is a negotiable instrument, and that mere

⁵⁴ *Oakland Nominees v Gelria Mining & Investment Co* 1976 1 SA 441(A.)

⁵⁵ Rabie *The Law of Estoppel in South Africa* (1992) 1.

⁵⁶ *Quenty Motors v Standard Credit Corporation* 1994 3 SA 188 (A) 199.

⁵⁷ *Johaadien v Stanley Porter, Paarl* 1970 1 SA 394 (A) 409; *Oakland Nominees* (supra)

delivery of the document on the APD constitutes proper delivery in terms of the rules and contract specifications.

Transferor precluded from reserving ownership

The wording on the face of the silo receipt was amended, and the following clause was inserted after the warranty of ownership contained in the old receipt. The new wording reads as follows:

‘Should any dispute arise between any persons relating to the transfer of this silo receipt, such persons agree that their claims will be limited to monetary claims, and that no person will be entitled to claim that he has retained ownership or a real right in the product represented by this receipt after transfer of this receipt’.

Consequences of amended wording on silo receipt

The amended wording will strengthen any defence based on estoppel by bona fide purchasers. The receipt now contains terms of the agreement between the transferor and transferee of the receipt and precludes the transferor from reserving ownership. The transferor therefore agrees to limit his common law remedies to a claim for payment of the purchase price. If a seller delivers the receipt to the purchaser, he warrants and creates the impression that, by the delivery of the silo receipt, he will not reserve ownership to the maize, and that he limits his contractual remedies to a monetary claim. Zandveldt and F. S. Graan would therefore not have been able to assert that they reserved ownership of the grain and their remedies would have been limited to a civil action against du Plessis for payment of the purchase price. The grain in question could be freely traded, even though du Plessis failed to pay the purchase price to his predecessors in title.

The amended wording seeks to ensure that, as far as possible, no person who has an interest in the grain referred to in the silo receipt will be entitled to assert his ownership or any real right in the grain after transfer or delivery of the silo receipt. This provision will be binding on any person who is a party to the transfer of the receipt. If, however, grain is stolen from a farmer, deposited in a silo and a SAFEX silo receipt issued to the depositor, the clause will not prevent a farmer from asserting his ownership to the grain, as he was not a party to the transfer of the receipt. Any person who becomes a party to the silo receipt expressly foregoes any right to contend that he has retained ownership or another real right in the grain after he has transferred the silo receipt.

The amended wording has been adopted to deal with the precise situation that occurred in the legal proceedings in the Zandveldt and F. S. Graan matters. The wording on the receipt was further intended to foster discipline in the market, by making it clear that any party who sells grain by the delivery of a silo receipt without receiving payment of the purchase price, takes a credit risk, as they are precluded from reserving ownership.

The amended wording affords similar protection to a *bona fide* purchaser as the protection afforded by a negotiable instrument: the purchaser knows that any prior holder of the receipt may not reclaim the grain covered by the receipt but will be limited to the remedies mentioned on the face of the receipt. It is, indeed, the reverse side of the coin of the legal position of a purchaser in good faith of a negotiable instrument – the purchaser becomes holder in due course of a negotiable instrument; and the purchaser of a silo receipt knows that he will not be evicted due to

a reservation of ownership by a predecessor in title. The main benefit is that the grain in question may be freely traded, even if there is a dispute regarding ownership.

The amended wording does not protect a buyer who obtained a stolen or forged silo receipt. The various interested parties in the grain markets are in agreement that such protection will not be beneficial to the market, as they were of the opinion that the victim of theft or forgery should be able to recover his grain even from a bona fide purchaser thereof. There has, to date hereof, not been any instance of forgery, fraud or theft of a SAFEX silo receipt. In the absence of any legislation, SAFEX management was of the opinion that the measures discussed above were the best that could be adopted in the absence of legislation that will regulate the industry as a whole.

The consequences of the bulk storage of grain covered by silo receipts

The commodities deposited in a silo are mingled in such a manner that it is no longer possible to distinguish or physically separate one depositor's grain from another and the commodities are therefore the subject of *commixtio* (see paragraph 3 supra). The depositors of the grain in the silo become joint owners of the mixture, in relation to the value of their contribution to the mixture.⁵⁸ The grain deposited by each owner has lost its individuality, is now part of all the grain in the container, and the mingling of the grain has created a new thing. Although this mixture now belongs jointly to all the depositors, each owner can dispose of his undivided share in the mixture.⁵⁹ Each co-owner can freely deal with his share, or part of a share, without the consent or cooperation of the other owners.⁶⁰ The silo receipt will therefore be utilised as symbolic delivery of the seller's undivided share of the mixture.

A problematic situation arises where, as a result of the continuous circulation of grain in a container, the holder of a silo receipt's maize is no longer in the container where it was deposited. The holder of the receipt is therefore not the co-owner of the mixture, but merely has a personal right against the silo owner for delivery of grain of the same quality and quantity. In these circumstances, the silo receipt cannot be utilised as symbolic delivery of the underlying commodity, as the holder can now only cede his personal right to claim grain from the silo owner to the transferee on the face of the silo receipt. Cession is a juristic act, which transfers the right from the estate of the cedent to that of the cessionary, who thereby becomes creditor of the silo owner in his stead.⁶¹ Personal rights are transferred by cession, and the silo receipt cannot be utilised as symbolic delivery of an underlying commodity, but merely serves as proof of certain terms and conditions of the underlying agreement of cession between the parties.

The derivative rules, contract specifications or the terms and conditions appearing on the face of the silo receipt do not make any provision for the cession of personal rights as a way to settle obligations in terms of a futures contract. It is clear from the terms of the futures contract, the derivative rules, and the wording of the silo receipt, that all the parties to a futures contract contemplate a purchase and sale of a physical commodity. If the hypothesis in this paragraph is correct, it will necessitate material amendments to the derivative rules, contract specifications, and silo owner requirements, to enable the parties to continue their trade in physical commodities and not personal rights to claim these commodities from the silo owner.

⁵⁸ Van der Merwe 265.

⁵⁹ Van der Merwe 384.

⁶⁰ Van der Merwe 384- 385.

⁶¹ Van der Merwe et al *Contract General Principles* (1993) 322.

JSE approved silo owners

Another very important aspect of the entire grain market is the integrity of the silo owners. It is of paramount importance that the holder of a SAFEX silo receipt will be able to obtain the grain covered by the receipt. A SAFEX silo receipt may only be issued by an approved silo owner. The requirements for approved silo owners are listed in appendices C and D to the AMD contract specifications. The important requirements include the following.

- Financial standing – the silo owner must be in good financial standing and credit, and shall have a net financial worth of R10 million.
- Experience and expertise – the silo owner and management must have adequate experience and expertise in the handling and storing of the commodity.
- Legal standing – the silo owner must be a legal entity registered in South Africa.
- Compliance with rules of SAFEX – the silo owner must comply with the rules of SAFEX.
- Record-keeping, inspection and reporting – the silo owner must maintain records reflecting the date of the receipt, quantity, quality and silo location of the commodity reflected on every SAFEX silo receipt in issue so as to facilitate audit and verification of the commodity reflected on the silo receipt by an inspector appointed by the JSE. The silo owner must provide the clearing house with a copy of each SAFEX silo receipt within a week of issue and shall notify within a week of the presentation and cancellation of a SAFEX silo receipt previously in issue.
- Insurance – silo owners shall have current insurance policies in place, covering silo buildings, equipment and commodities stored therein against the following minimum risks: fire, earthquake, earth tremor, malicious damage, storm, flood, spontaneous combustion and explosion.

Insolvency of the silo owner

The important buyers of grain were concerned that, in the event of the insolvency of the silo owner, they would only have a claim against the insolvent estate of the silo owner. All the parties agreed that the ‘net worth’ requirement will not afford sufficient protection to the holder of the receipt, as the quantity and the value of the grain stored by each silo owner are worth much more than the minimum ‘net worth’ requirement.

The SAFEX silo receipt clearly states that the silo owner is not the owner of the product stored and that he only has a lien over the product stored, in the event of outstanding storage costs. In practice, all the storage costs are paid in advance, and there are very few occasions where the holder of the receipt will have to pay outstanding storage costs to the silo owner.

If a silo owner is insolvent, his trustee (or the liquidator if it is a company in liquidation) would only have a claim for outstanding storage fees (if any) and would have to deliver the grain after receipt of these fees. The maize stored would therefore not form part of the insolvent estate and must be delivered to the holder of the receipt.

The holder of the silo receipt is still the owner thereof, even if it is deposited in the same bin with grain belonging to other parties. The mixture belongs jointly to the depositors, if the mixing took

place by consent. Each individual depositor retains his ownership in a portion of the grain stored in the silo.

If, however, grain in a silo is circulated on a continual basis and, at the time that a holder of a silo receipt demands delivery of his grain, none of the original grain remained in the silo, and the silo contained entirely new grain, which was deposited after the issue of the receipt in question, then the holder of the receipt would not be the owner of any actual grain in the silo. The holder of the receipt will only have the right to claim delivery of an equivalent quality and quantity of grain from the silo owner. This issue will be material in the event of the insolvency of the silo owner, as the holder of the receipt now has a claim against the insolvent estate. The solution to this problem is to prohibit the silo owners from withdrawing any grain covered by a SAFEX silo receipt.

Central registry for SAFEX silo receipts

A central SAFEX silo receipt registry (for physical receipts) has for some time been suggested by certain market participants. In principle, if implemented, the JSE would hold certain receipts on behalf of the owners thereof in a fireproof safe and would only deliver the receipt to the transferee, if the transferor of the receipt instructs the JSE to do so. The practical value of a central registry is still the subject of some debate, as it will not enhance the transferability of the receipts. The holder of the receipt merely has to ensure that he receives payment of the purchase price before he transfers the receipt to obtain similar benefits to the advantages of a receipt held in a central registry.

The proposed central registry has not been the subject of much discussion during the last six months. The market participants were of the opinion that the amended wording is sufficient to limit the risks involved in trading grain through SAFEX silo receipts on the AMD and spot markets. The central registry would derogate from the SAFEX silo receipt's transferability, as the receipts would not be freely circulating in the market, but be kept on the premises of the APD. The protection afforded by a central registry could easily be obtained, by stipulating and ensuring that the purchase price must be and is paid before the SAFEX silo receipt is transferred to the purchaser of the grain.

Possible dematerialisation of SAFEX silo receipts

Warehouse receipts (of which silo receipts are an example) are by their nature paper based and there are no examples of electronic or dematerialised warehouse receipts in the world. Zambia is currently considering the possibility of dematerialising their silo receipts and is the only country, apart from South Africa, to do so.

The dematerialisation of SAFEX silo receipts has also been the subject of recent discussions between the interested parties on the grain markets. The issues pertaining to the dematerialisation need to be considered in more detail. The immediate benefits of dematerialisation would seem to be:

- faster and more efficient settlement of transactions
- accurate transfer of stock from a transferor to transferee
- more accurate and immediate checking of ownership of grain covered by the receipt

- more accurate records of stock levels
- financial institutions financing stock will take on fewer risks
- silo owners will be able to identify who owns the stock in a particular silo
- silo owners would be able to assist the industry by furnishing accurate grain levels
- the dematerialised receipts will be held in a central silo receipt registry and will give additional integrity to the receipts.

In terms of a notice published by the JSE on 15 January 2004,⁶² the JSE informed all market participants of the possible implementation of electronic silo receipts as a method for the settlement of futures contracts. The introduction of the electronic silo receipt will enable parties to a futures contract to transfer silo receipts electronically via the Internet. The use of electronic silo receipts will not amount to the dematerialisation of all receipts where all paper based receipts will be removed from the market, it will merely afford a choice to market participants to make use of a paper or an electronic receipt.

The Electronic Communications and Transactions Act⁶³ (ECTA) gives recognition to the fact that agreements concluded by data messages cannot be denied legal force and effect merely on the basis that it is concluded by way of a data message.

The market participants are very enthusiastic about the possibility of dematerialising SAFEX silo receipts and, although the idea has only recently been discussed, it received wide ranging support from all the role players in the grain market. The legal status of such receipts would have to be investigated properly, as one of the requirements of a negotiable instrument is that it must be 'in writing'. There is, however, no authority to support (or disprove) the contention that the electronic reproduction of a negotiable instrument will satisfy the 'in writing' requirement as stipulated in the bills of exchange Act.⁶⁴ The provisions of the ECTA⁶⁵ do not apply to the 'in writing' requirement formulated in the Bills of Exchange Act. There is also no authority for an electronic form of symbolic delivery, as all the common law examples, such as keys and bills of lading are tangible. It would, however, seem that an electronic receipt would comply with the essential requirements of *clavium tradition*, it being the intention to deliver the goods by the delivery of a symbol, and the symbol would enable the purchaser to exercise physical control over the maize .

General insurance policy on all grain covered by SAFEX silo receipts

During the deliberations and consultations that followed the High Court applications, it became clear that it would be impossible to eliminate all risks of a transaction relating to trades in commodities. If, for example, legislation was passed that declared a silo receipt to be a negotiable instrument, it would still not guarantee delivery of the grain covered by the receipt to the holder thereof (a cheque is a negotiable instrument but is not a guarantee that there will be funds to pay it).

⁶² A 366.

⁶³ 25 of 2002.

⁶⁴ Malan and Pretorius 49.

⁶⁵ Section 4(3) and Schedule 1 to the Act.

The only way to limit the risks as much as possible would be to take out an insurance policy over all the grain covered by SAFEX silo receipts. The JSE had discussions with insurance companies who stated that the idea was feasible. The clearing members of the JSE are, in principle, willing to pay a few cents more per transaction for payment of the premiums of the insurance policy. The negotiations regarding the insurance policy are not well advanced and further discussions would be necessary, if this option is pursued.

The role players in the grain market, and, more specifically, the international grain purchasers, supported this idea and were of the opinion that this is the only way to be able to minimise the risks involved. It must still be decided whether this insurance policy will operate as additional cover to the existing policy of the silo owners or as comprehensive cover of all the grain stored in the silos.

Silo receipts as liquid security

The SAFEX silo receipt has been used by various financial institutions as security for funds advanced to the holders thereof. The benefits of this form of security are that it can be liquidated within two days from delivery on the APD. The insurance policy mentioned above will go a long way towards minimising the risks in utilising the silo receipts as security for loans.

Conclusions

Further consideration will have to be given to many of the issues raised: improvement of the commodities market as a whole is an integrated and ongoing process. The SAFEX silo receipt is not a negotiable instrument and can be equated with a bill of lading. There is no authority for the proposition that an instrument containing an undertaking to deliver anything other than money, or a security in respect of money, can be classified as a negotiable instrument. The SAFEX silo receipt is a document of title, and is transferable, but is not a negotiable instrument. The silo receipt is utilised to deliver the commodities covered by the receipt and the transfer of the commodities is facilitated by the delivery of the receipt. Delivery of the SAFEX silo receipt is delivery of the maize; and the transactions concluded on the APD are transactions in the commodities, and not transactions in silo receipts, or the right to claim delivery of the commodities covered by the receipts.

The issue of the negotiability of SAFEX silo receipts must still be a subject for further discussion. The need for legislation to afford the status of negotiability to SAFEX silo receipts was explained in this document. It is important to note that the United States of America has extensive legislative provisions regarding the status of warehouse (silo) receipts, and the requirements to be a registered warehouseman (silo owner). English law protects a *bona fide* purchaser of movables through statute and although a warehouse receipt is not a negotiable instrument, the *bona fide* purchaser of goods covered by such a receipt is afforded certain protection through the workings of the Sale of Goods Act.

The amendments to the wording of the SAFEX silo receipt will protect the *bona fide* purchaser in all instances, except if fraud or theft on the part of a predecessor in title was involved. In the absence of legislation, the amended wording on the receipt was designed to furnish maximum protection to *bona fide* purchasers of the commodity in question. If a SAFEX silo receipt was a negotiable instrument, a *bona fide* purchaser for value of a stolen receipt could obtain good title to the receipt. The interested parties in the grain markets will have to decide whether they wish to

afford the status of negotiability to the SAFEX silo receipt. Legislation will have a positive influence on the status of a SAFEX silo receipt, as South Africa will have similar legislation to the United States of America, and investors will take cognisance of the fact that the status of SAFEX silo receipts is governed by statute.

It needs to be stressed that legislation will not cure all ills or prevent all risks. It would be impossible to draft rules or legislation that will prevent the possibility of litigation pertaining to commodities delivered by silo receipts. Cheques are negotiable instruments and there are countless instances of fraud, forgery and theft of cheques. The holder of a cheque is not guaranteed payment, as there may not be enough funds to pay the cheque. In my opinion, the risks inherent in commodity markets can, at best, be managed, and deferred to insurance companies. There will, however, always be risks involved.

Bibliography

Agricultural Warehouse Act 42 of 1930 (South Africa)

Bills of Exchange Act 34 of 1964 (South Africa)

Catering Equipment Centre v Friesland Hotel 1967 4 SA 336 (O)

Commissioner of Customs and Excise v Randles Brothers and Hudson Ltd 1941 (AD)

Cowen and Gering Law of Negotiable Instruments in South Africa (1985 Juta Cape Town).

Du Toit, The Bill of Lading in South African Law (LLD Thesis RAU 2000).

Electronic Communications and Transactions Act 25 of 2002 (South Africa)

F S Graanbemarking C.C v Venter N.O and others (case no. 3497/2000 OPD 18 January 2001 – unreported)

Financial Markets Control Act 55 of 1989. (South Africa)

Golden Cape Fruits (Pty) Ltd v Fotoplate (Pty) Ltd 1973 2 SA 642 (CPD)

Goode Proprietary Rights and Insolvency in Sales Transactions (1989 Sweet and Maxwell London).

Gurney v Behrend (1854) EL & BL 622 The English Reports, Kings Bench Division, Volume 118, page 1275.

Hapgood Pagets Law of Banking (1989 Butterworths, London).

Hedley Bills of Exchange and Banker's Documentary Credits (1997 LLP London).

Impala Plastics v Coetzer 1984 (2) SA 392 (W)

Johaadien v Stanley Porter, Paarl 1970 1 SA 394 (A)

MacKeurten Sale of Goods in South Africa (1984 Butterworths Durban)

Malan and Pretorius Malan on Bills of Exchange, Cheques and Promissory Notes (2002 Butterworths Durban).

Oakland Nominees v Gelria Mining and Investment Co 1976 1 SA 441 (A)

Quenty Motors v Standard Credit Corporation 1994 3 SA 188 (A)

Rabie The Law of Estoppel in South Africa (1992 Butterworths Durban).

S v Buitendach 1980 2 SA 152 (T)

Silberberg and Schoeman The Law of Property (1992 Butterworths Durban).

The Factors Act 1889 (England)

The Rules of the Derivatives Division of the JSE. (August 2001)

The Sale of Goods Act, 1979 (England)

The Uniform Commercial Code of the United States of America.

Van Breda v Jacobs 1921 AD 330

Voet Commentary on the Pandects; Translation by Percival Gane (1957 Butterworths Durban).

Zandveldt Graanbemarking C.C v Venter N.O and others (case 3518/2000 14 December 2000
OPD – unreported)

Session 6

Auctions, warehouse receipts and agricultural commodity exchanges

Cereals auctions

Philippe Ki (Afrique Verte, Burkina Faso)

In the context of the assistance to the cereal actors for the marketing of cereals, Afrique Verte has organised cereal exchanges since 1990.

What is a cereal exchange?

It is a place and a time dedicated to the interaction of supply and demand of cereals. It brings together direct and indirect participants, partners and other stakeholders of the cereal network.

What are the objectives of the cereal exchange?

The cereal exchange aims to:

- match supply and demand in cereals in order to satisfy the needs of the different people involved (buyers and sellers)
- promote the marketing of cereal production from regions with surplus to regions with cereal deficit and to consumption centres
- promote the relations of and cooperation between people, the support structures, and the funding institutions in rural areas
- increase the professionalism of the people involved in the cereal network in the field of marketing.

How does a cereal exchange work?

In general, the exchange follows the steps outlined below.

- *Before the exchange:* the potential participants send information sheets that consist of a description that is as detailed as possible of their needs during the exchange (purchase or sale of cereals). A synthesis of those needs is established by Afrique Verte.
- *During the exchange:* the activities of the exchange start with a presentation of the synthesis of the needs expressed by the participants. This presentation also enables participants to know who wants what and under what conditions, or who offers what and under what conditions. After this first step, time is allocated to allow buyers and sellers to engage in exchanges and negotiate directly with each other. This activity takes place outdoors through open negotiations. At the end, a plenary session is organised to communicate the outcome of the supply and demand interaction, such as orders placed, and contracts signed.
- *After the exchange:* this last step involves fulfilment of agreements reached through the execution of the contracts signed. Afrique Verte ensures the monitoring of the transactions decided between people during the exchange. Through its role of support and intermediation, it contributes to facilitating the execution of the contracts.

It is appropriate to add that, depending on the duration of the exchange, the programme can include presentations on various topics (related for instance to the rural world, the cereal network and the funding of cereal marketing) which aim to provide information to the participants and to support exchanges and consultations among the people in the network. In that way, the exchange is also a means of information and training for people involved in the cereal network.

What are types of cereal exchange have been put in place?

Until now Afrique Verte has set up three types of exchange.

- *The regional exchange*: an exchange located in a determined area (generally an area with surplus). It is however open to all the people who believe that they can find business opportunities.
- *The national exchange*: this is national, and generally takes place in the capital of the country. The participants come from all the different parts of the country. In general, during this exchange, presentations are made, in addition to discussions concerning the interaction between supply and demand.
- *The sub-regional exchange*: an exchange that brings together the people in the cereal networks of the three countries that Afrique Verte supports – Burkina Faso, Mali and Niger.

Who finances the cereal exchange?

The exchange is a priority activity of Afrique Verte which ensures technical and material organisation, in close collaboration with the farmers' organisations in those countries.

However, the funding of the exchange does not depend exclusively on Afrique Verte. Due to the relevance of the exchange, several participants contribute in one way or another to its organisation. Those involved include first of all the direct people (private operators and farmers organisations) who offer tangible contributions, and second, the development partners who can finance all or part of the exchange.

Livestock managed markets

El Hadj Démo (UDOPER, Benin)

Beset by the withdrawal policy of the state in the 1990s, an associative grouping of farmers and breeders has been set up progressively. Its members were not ready to take over the roles and tasks abandoned by the State, but were determined to take their responsibilities in development matters. Since then, this grouping has evolved. It is during this phase of empowerment that the Union Départementale des Organisations Professionnelles d'Éleveurs de Ruminants' (Departmental Union of Professional Organisations of Livestock Farmers, UDOPER) appeared in 2001.

This livestock farmers' organisation is sponsored by livestock markets with multiple functions.

What is a traditional livestock market?

A traditional livestock market is a place where supply and demand meet to lead to the setting of a price for an ox or a small ruminant.

The sale of an animal on livestock markets operates through a middleman (*dilani*). This type of market has the following main characteristics:

- the buyer is never brought into contact with the seller, and *vice versa*
- the middleman takes advantage of the transaction to obtain a financial remuneration from the buyer as well as from the seller in a dishonest way
- in these transactions there is no price transparency.

Faced by these facts, leaders-*cum*-advocates have thought about modernising the traditional markets. This reflection has led to livestock self-managed markets.

What is a livestock self-managed market?

The fundamental characteristics of livestock self-managed markets are as follows:

- there is no middleman between seller and buyer, but a witness (*seedêjo* in the Peuhl language)
- the witness of the sale does not intervene in the bargaining between the two traders
- the *seedêjo* receives a tax by head of cattle at the end of the transactions to which he has borne witness
- these types of market have a legal status and various management documents, including:
 - transaction tickets

- a sales book
- a cash book
- a pay book
- a worksheet of the employees of the market
- a book of the cash payments to fund local development.

There is also a management committee, which brings together interested people, farmers and breeders, butchers, traders and loaders.

Since their establishment, the livestock self-managed markets have evolved and grown. From the nine markets at the outset (Bodérou, Dérafi, Ina, Sakabansi, Monko, Kérou, Nièkèkè-bansou, Ouèssè), which were part of a network called Réseau Lumodji Marefudji Sago du Bénin, the number of markets has risen to 21.

There is no need to prove the socio-economic impact of livestock markets any more. On one hand, the livestock self-managed markets have enabled the construction of support services on the sites where they are located; on the other hand, they have invested in the development of their neighbourhoods. Other advantages of livestock self-managed markets include:

- improvement in transactions and revenues, transparency, time-saving and centralisation of information
- job creation and upgrading of the middleman's job
- improvement of animal health by selling veterinary products at preferential prices to farmers of UDOPER
- farmers taking part in decision-making concerning local development.

But these livestock self-managed markets do not evolve without problems. With the advent of decentralisation, some laws specify that 'the management of sales infrastructure is within the jurisdiction of municipal authorities'. This leads to altercations between the former managers of these markets and the municipal authorities.

But very early on, thanks to the support of SNV-Benin, this situation has been resolved reasonably, through the organisation of a workshop on the joint management of the livestock self-managed markets that took place in Gogounou on 16 and 17 August 2005.

Market opportunities

In the present context of the eradication of poverty on the one hand, and the constraints of decentralisation on the other hand, the setting up of livestock self-managed markets is justified.

However, in order to ensure the sustainability of production and of the livestock enterprises, other markets are essential, such as for veterinary inputs and cattle feed.

Management of livestock self-managed markets by delegation

Since the workshop on the joint management of the livestock self-managed markets that took place in Gogounou on 16 and 17 August 2005, we know that the laws on decentralisation have entrusted the local authorities with the construction, the equipment, the repairs, the maintenance and the management of the markets and slaughterhouses through Article 104. In the Borgou and Alibori departments, these infrastructures were managed by farmers' organisations, under the supervision of UDOPER.

These competences have to be transferred to the local authorities, in accordance with the legislation. However, following the failure of the first attempts at transfer, the local authorities have found it convenient to entrust UDOPER with the management through their authority.

Conclusions

Our work is not a panacea for the problems of farmers and other social classes. Your contributions and suggestions for improvements are most welcome. To sustain our exchange, we wish to define collectively a framework that will enable us to see and analyse the problems that we have in common.

Key considerations in the design of regulated warehouse receipt systems in Africa

Jonathan Coulter (Natural Resources Institute, UK)

This paper provides guidance to people seeking to establish warehouse receipt systems (WRS) in Africa, based on the author's research and practical experience since the early 1990s. Rather than provide an encyclopaedic coverage of the topic, I have tried to identify the most important design considerations with a view to assisting those interested in promoting their introduction. The reader can obtain more detailed information by consulting references listed at the end of the paper.

The rationale – why bother?

First of all, rural Africa is collateral-starved. In many countries, banks have considerable excess liquidity, because they find it difficult to identify enough low-risk lending opportunities. Urban real estate is the main form of collateral, but from a banking perspective it is far from ideal, being slow to realise in the event of foreclosure. Rural land is usually ineligible on account of customary forms of tenancy. This puts a great premium on systems that allow banks to attach debts to stock-in-trade. Such systems are particularly advantageous if they allow banks to focus attention on a single risk factor, the price of the stock itself, which they can mitigate in various ways: by using market intelligence, by 'hair-cutting' (only lending a percentage of the stock value) and, in some cases, by hedging so as to lock in a forward or minimum price.

There are series of other reasons for establishing WRS in Africa. Smallholder agriculture is fragmented, lacks bargaining power and reliable sources of input supply, and, except when working in conjunction with strong outgrower schemes, is of little interest to the banks. Markets lack transparency, in terms of both quality and price, and it is often difficult for farmers to negotiate effectively with buyers. It is very difficult to set up enforceable contracts, for which reason grain must be bought and sold on a spot basis. African countries have much to gain by establishing systems that assist in the bulking and standardisation of agricultural products so that they can be traded more transparently and in line with market requirements; and provide smallholder farmers and small traders with a 'ladder' that they can use to gain the interest of banks and other service suppliers.

Regulated and unregulated approaches

With the liberalisation of agricultural marketing systems, collateral management agreements (CMAs) have become a common form of warehouse receipt system in Africa. They are typically used in the pre-export or post-import financing of commodity inventories, often as part of structured financing arrangements linking suppliers to end-users. Leading millers and traders have also used them as means of financing inventories of commodities, such as maize and sugar, which do not pass across borders. The provider of the collateral management service is normally the subsidiary of a Geneva- or Paris-based inspection company, and the agreement is tripartite in

nature, involving the borrower (typically an exporter, trader or miller), a bank, and the collateral manager.

Collateral managers have played an invaluable role in oiling the wheels of commerce in countries where there is a shortage of readily bankable customers; these countries cover most of the developing world, plus Eastern Europe and the former Soviet Union. However, their dominance over the storage business is also a symptom of these areas' relative underdevelopment and, more specifically, their lack of bankable home-grown warehousing systems. CMAs are accessible only to large customers who can afford the collateral managers' fixed charges; typically at least US\$2,000 per site per month, excluding physical handling, store rental and pest control. Moreover, collateral managers will usually only provide services on a one-to-one basis, working with individual traders, millers, cotton-ginners etc. who must have sufficient commodity to fill the warehouse under management. Unlike warehouse and silo operators in some developed countries, and the Republic of South Africa, they do not operate 'public warehouses' (public depositories open to multiple depositors). This creates a major scale threshold, which makes it difficult for farmers and small- and medium-scale enterprises to access collateral management services and low-cost or hard-currency financing.

Precedents in various countries, notably the USA, much of South America and the Philippines, show that it is possible to solve this problem by organising regulated warehousing systems that enable a larger group of providers to enter into the warehousing business, including trading companies that offer storage services as a sideline (Coulter and Shepherd, 1995; Lacroix and Varangis, 1996).

The organisation of regulated systems can strengthen the agricultural markets of Africa in a variety of other ways, notably by increasing market transparency; the regulatory regime can be instrumental in introducing standard grades, weights and measures at participating warehouses. It provides an opportunity for farmers to organise, bulk up produce, sell to remote buyers and gain a credit history. Indeed, production credit is potentially more attractive to both bank and borrower when the borrower is not obliged to sell his product after the harvest, but can deposit it with a collateral manager who holds it until prices are favourable. It makes it easier to establish commodity trading systems, and provides a tool by which public and food aid buyers can efficiently manage their stocks (Lacroix and Varangis, 1996; Martin and Bryde, 1998). The WRS can also become a focus for the organisation of stakeholders, and a healthy policy dialogue between these stakeholders and government (Coulter and Onumah, 2002; Coulter, 2005). In short, the organisation of an effective regulated WRS can contribute to breaking the log-jam of low productivity, which affects much of African agriculture.

This paper focuses mainly on regulated systems, although it also considers other alternatives that may be workable where it is not possible to establish nationwide (or region-wide) regulatory systems.

Key considerations

Experience to date calls attention to a few key considerations that need to be taken into account in designing a regulated system in Africa - trust, scale, the policy environment and the legal framework of the country concerned. The arrangement of trust is the most important factor, and explains why subsidiaries of multinational operators have come to dominate the collateral management business. While not immune from failure, these companies enjoy the backing of their first-world parents and have internationally underwritten professional liability insurance. The cover typically has various exclusions, and the collateral managers do not offer depositors a

'full out-turn guarantee', but the companies concerned clearly provide African banks with a significant level of comfort, such that they usually do not use home-grown collateral managers.

How can one engender trust in a WRS?

In most developing countries, it is preferable to have some sort of regulatory framework to license warehouses to receive deposits of agricultural products, and issue warehouse receipts against them. The objective is that buyers of grain, banks and other participants will treat all warehouse receipts the same, regardless of which warehouse issued them. The more effectively regulated the system, the more trust depositors and banks will have in those warehouses that are licensed to operate and issue warehouse receipts. This is particularly important for warehouses in outlying locations, which bankers rarely visit.

The criteria for licensing a warehouse operator will take account of its financial strength, physical facilities, competence of staff, ability to store according to quality standards, and administrative capabilities. The company may, moreover, have to put up a financial guarantee to protect depositors in the event of negligence and fraud. Apart from this, it will be subject to unannounced inspections to ensure that its obligations are covered by commodities in store.

If the regulator is to be effective, it will need above all to be distanced from political processes. There are two reasons for this. First, there is a mismatch of time horizons between political processes and the development of the WRS. The WRS needs time to grow gradually and organically, but politicians interested in WRS tend to be looking for speedy solutions to marketing problems, or perceived problems. For this reason, they may try to rush the organisational process at the expense of the banking confidence necessary to underwrite the system in the long term. Second, regulatory decisions need to be made 'by the book' and without fear or favour. If decisions are swayed by political pressure, banks will lose trust and tend to eschew local operators in favour of established CMA arrangements.

In countries where public administration is characteristically weak and/or highly politicised, the only alternative may be to place the regulatory regime in the hands of a body representing stakeholders who have a vested interest in the success of the system. At its simplest, such a body can operate on a purely contractual basis with warehousing companies whose suitability to handle third-party stocks it can certify. However, it is likely to have greater reach if it works under national warehousing laws and with regulatory powers delegated by the State.

Stakeholder-controlled regulatory bodies do not guarantee success, as they can suffer schisms or become politicised in their own right. However, in some countries the approach appears to be yielding results. In the Republic of South Africa, the SAFEX division of the Johannesburg Stock Exchange oversees a large number of silo facilities that are registered as SAFEX delivery locations. Grains are delivered on SAFEX silo receipts that enjoy prestige *vis à vis* receipts issued by silo operators in their own name. Probably of greater relevance to the rest of Africa is the Zambian WRS, the only significant regulated WRS for grains in Africa north of the Limpopo. The regulatory function is handled by the Zambian Agricultural Commodities Association (ZACA) Ltd, a stakeholder-controlled organisation whose board includes representatives of farmers, traders, banks, insurers, government and development projects. In the second year of operation, five ZACA-certified warehouses received deposits of 66,000 tonnes of maize. One of the warehouse operators and four banks provided farmers with finance against the stocks they deposited in the warehouses.

Another case worthy of mention is the coffee WRS in Tanzania, which in 2004-05 resulted in the lending of US\$7.6 against stocks stored by cooperatively-owned coffee-curing companies,

licensed by the Tanzania Coffee Board. A key feature which gives them credibility *vis à vis* banks and depositors is their autonomous member-controlled character and independence of political processes.

In the case of Brazil, the world's fourth agricultural producer, politicisation was at the root of long-running failure of the warehousing sector. Some warehousing companies belonged to senators, and the public regulator was unable to establish rigorous regulatory discipline such that would disqualify underperforming operators (Coulter *et al.*, 1998). With the passage in 2000 of law 11,076, the country is seeking to address this problem and generally modernise the warehousing system. Compared with the previous law (decree 1,102 of 1903), the new legislative framework allows private entities a more important role in managing the system. For example, the Central Bank of Brasil has authorised the clearing house of the leading commodity exchange (Bolsa de Mercadorias e Futuros, of São Paulo) to institute a system of electronic registration and custody of warehouse receipts.

Size matters: the importance of scale

There are large economies of scale, both in running warehouses and in ensuring their integrity. A large part of the costs of managing warehouse sites are fixed, regardless of the capacity of the site, while the regulator's expenditure on activities such as reviewing financial statements, ensuring performance guarantees are in order, and travelling to warehouses, are also fixed. ZACA has a budget of around US\$120,000 per year, and while it initially enjoys donor subsidy, aims to cover these costs fully within a period of 5 years from initiating activities. It obtains its revenue through a US15 cent per tonne month charge on stocks held by certified warehouses.

The difference in running and regulating a site storing 1,000 tonnes and 10,000 tonnes of grain is in no way proportional to the difference in tonnages, so in order to make the operation self-financing, it is important to bring a group of large warehousing sites within the system during the early years. Once the regulatory operation has covered its fixed costs, it can then proceed to license smaller warehouses in relatively remote areas, as long as the revenue they provide covers the regulator's relevant variable costs. This of course involves some element of cross-subsidisation, with larger warehouse operators funding a large share of the regulator's overall costs, but this can be called a 'smart subsidy' because it is self-financing and doesn't create costly market distortions.

Owing to the relatively modest levels of overall agricultural production, and the prevalence of smallholder farmers as suppliers of commercial surpluses, scale is a particularly critical consideration in Africa. In most countries, total grain production is in the range of 1-4 million tonnes, and much of this is consumed in the villages where it is produced and never enters trade channels. These production levels are small in comparison with major world producers (e.g. the USA, average 345 million tonnes between 2001 and 2005; Argentina, 35 million tonnes), and are less than relatively small European countries (e.g. Hungary, 14 million tonnes; Bulgaria, 6 million tonnes).

Smallholder farmers find it harder, though by no means impossible, to accumulate large surpluses and meet the quality requirements of warehouses, than do commercial farmers. For this reason it is very difficult, if not impossible, to establish a regulated WRS, simply on the basis of deposits by smallholder farmers. In order to bring in large deposits of commodities and attain economies of scale, it is necessary to involve people such as commercial farmers, millers, traders (including international commodity dealers), and public buyers including official food security reserves and food aid agencies. Once the system is up and running, NGOs and development projects can focus on helping smallholder groups and sees such as hammer-milling operations to

take the greatest possible advantage of the system. Indeed, the system can only be fully successful if it creates a more even playing field whereby smallholder farmers can compete more effectively with commercial farmers.

The World Food Programme (WFP) is now the largest buyer of grain north of the Limpopo, and can potentially enter into a mutually rewarding relationship with promoters of warehouse receipt systems around Africa. In Ethiopia and Uganda alone, WFP and other food aid agencies are currently purchasing locally in excess of 300,000 tonnes of grain per annum. By helping local stakeholders establish WRS, the WFP can improve its access to well graded commodity, diversify its supply sources and reduce procurement costs. At the same time, WFP can provide the necessary liquidity to ensure that the WRS takes off and gathers economies of scale (Walker *et al.*, 2005).

The banks are the other vital contributor to the development of the regulated WRS. Local staff of African banks north of the Limpopo have very little experience of WRS, apart from the tripartite CMA arrangements referred to above. This applies to both locally owned and international banks, even those that use the silo receipt system in South Africa. More seriously, most African bankers have very limited familiarity with, and exposure to, agriculture, and often view the sector as loss-making.

Here the WRS offers a way of interesting banks in the agricultural sector, as it is potentially very attractive to them as a means of lending at low risk and expense. Once they are comfortable with the WRS, they can provide vital liquidity to make it work over the long term, and make it less dependent on concerns such as those of WFP, whose presence in countries waxes and wanes according to the size of refugee and internally displaced populations. Martin and Bryde (1998, p. 11), writing from Eastern European experience, put it this way:

‘Once the “demonstration effect” has taken place, the warehouse receipts have the potential to become a standard way to finance the agribusiness sector. They could attract to it resources from institutions that at the moment consider this as one of the most risky sectors, in which the companies are not well capitalised, and where it is almost impossible to obtain good collateral.’

WRS promoters should therefore seek to understand banks’ opportunities and needs, and be prepared to provide training and capacity-building inputs accordingly.

In the long term, it will probably be necessary for the regulatory authority to license all relevant warehouses of over a certain minimum capacity, regardless of whether they issue warehouse receipts, in order to ensure that all warehouse operators contribute to the regulatory costs. In this regard, it is worth noting that most American grain-producing states have found it necessary to establish mandatory licensing regimes. For example, the Indiana grain buyers and warehouse licensing agency maintains licensing and oversight of virtually all stored grain, with a view to ‘preventing loss to Indiana farmers from fraud and bankruptcy of grain buyers and warehousemen’. Indiana’s grain buyers and warehouse licensing and bonding law provides for mandatory licensing of all companies buying or storing more than 50,000 bushels. This is equivalent to about 1,270 tonnes, a minimal quantity for traders operating in the mid-west of the USA. The same agency registers companies storing less than 50,000 bushels as ‘grain banks’ (Anon, 2006).

In countries starting to set up regulated WRS, it may be wise to make licensing voluntary until such time as the regulatory function has proved its efficiency to stakeholders in the country concerned. To facilitate the transition to a mandatory regime, any new WRS legislation should provide the means for government to institute it without the need for fresh legislation.

A supportive policy and institutional environment

Governments often welcome the establishment of WRS, but in practice the policy environment does not always prove favourable. For example, governments sometimes:

- intervene suddenly in a way that alters market fundamentals, causing price to drop and people storing in licensed warehouses to lose money; the introduction of food aid grain on to the market can have a similar effect
- maintain a high overall level of government intervention in the market, such that seasonal price movements do not reflect carrying costs⁶⁶ – this has been an issue in former socialist countries of East Europe (e.g. Poland in the late 1990s) rather than in Africa, where governments have generally lacked the resources to engage in sustained large-scale intervention
- unexpectedly reduce import tariffs, with similar effect – this happened in Ghana in 1997, causing difficulties for two inventory credit schemes (Coulter and Onumah, 2002)
- decline to make under-utilised public storage facilities available for WRS, even when they are unutilised.

Given the history and politics of grain marketing, promoters should not expect the policy environment to be perfect for the establishment of WRS. However, it is best to organise such systems where the environment is relatively favourable, and build bridges with politicians and officials, consulting and familiarising them with their rationale and operation. Government may provide certain services, for example crop forecasts, food balance sheets and market information, which stakeholders can potentially use to mitigate the financial risks they incur. It is important to evaluate the information available and see how it can best be made available to stakeholders, e.g. over the Internet, through radio bulletins or mobile phones, and if the information is not suitable, seek it out through other sources.

Establishing a supportive legal framework

Some earlier papers have suggested that the most important element in establishing a WRS is a favourable legal environment (Lacroix and Varangis, 1996; Martin and Bryde, 1998). Banks and buyers require good title to the underlying goods represented by the warehouse receipts, and protection against seizure or litigation by other claimants to these goods. The latter requirement is encapsulated in the terms ‘negotiability’ and ‘perfected security interest’, which mean that a party who receives the receipt in good faith can take possession of the goods in preference to other claimants who may have a security interest in them. When WRS are ‘negotiable’ they are functionally equivalent to the goods themselves. Under such circumstances, business people can buy and sell, and lend against, warehouse receipts, without having to establish the absence of other charges against them. Such legal protection is of the greatest importance in developing a strong WRS, particularly when it involves grain stored by a large number of farmers or traders. Holders of warehouse receipts also need legal protection to provide cover for the possibility of events, such as the death or bankruptcy of the borrower or the warehouse operator.

⁶⁶ The absence of a predictable seasonal price pattern will greatly diminish demand for WRS. However, it should be remembered that some players are attracted to WRS as a procurement tool rather than a means of making speculative gains. Large buyers such as millers, coffee exporters, cotton spinners and food-aid agencies may simply use them to finance their operating stocks.

However, experience to date indicates that, at least in those countries that have a common-law legal framework, it is possible to start regulated WRS without a legal system which provides for negotiability. In South Africa, which has a Roman-Dutch legal system, the silo receipts system is treated as if negotiable, even though legally speaking, they are not negotiable instruments; certain test cases have upheld the position of receipt holders against other claimants. These and other experiences in Africa to date confirm the following statement from Coulter and Shepherd (1995, p. 26):

‘It is stressed that the ‘practical’ effects of a particular legal variable on the viability of inventory credit will usually not be evident from the examination of legal doctrine alone. Where the economics of the scheme are strong enough, and lenders are comfortable that the practical risks are small, they may be able to live with a certain amount of legal ambiguity. Where, however, the economics are unclear and the political and business culture is unaccustomed to what is being proposed, legal uncertainties may present another reason for sceptical participants, particularly banks, to turn away from an uncertain venture.’

Where it is not possible to make the warehouse receipts *de facto* tradable and pledgeable, there is a strong case for new legislation. Zambian bankers made this point very poignantly during the second highly successful year of the regulated WRS in that country, by stating they were ‘only scratching the surface’. They could achieve far more, particularly with smallholder grain, once the draft warehouse receipt law was passed and warehouse receipts became negotiable documents of title (Georgina Smith, Natural Resources International, UK, personal communication).

Alternatives to the regulated warehouse receipt model

The regulated model has two potential drawbacks: its requirements for scale; and honest and strict regulatory governance. It is worth asking whether there are alternative systems, apart from the above-mentioned CMAs, that can prosper in the absence of these prerequisites.

There have been some well organised smallholder-oriented inventory credit or warehouse projects, including those organised by TechnoServe in Ghana and the Ministry of Agriculture and FAO in Niger (Bass and Henderson, 2000; Kwadzo, 2000). However, with such projects it is difficult for the promoter to find an exit strategy in a way that makes the regulatory oversight function self-financing. One case where promoters appear to have overcome this problem is that of the Caisses d’Epargne et de Crédit Mutuels (CECAMs) in Madagascar. Village credit unions belonging to a large regional micro-finance institution (MFI) are financing members who store paddy in small local warehouses. The stock is jointly held by the credit union and the borrower under a ‘dual key’ arrangement. Since the inception of this initiative in 1992, the volume of paddy stored had risen to around 80,000 tonnes and the project is reported to be having a very positive impact on local food security (Fraslin, 2002, 2005).

The big advantage of the CECAM system is that a single institution fulfils both the regulatory and lending function; the lender is directly concerned in looking after its own assets and thereby absorbs the relevant overheads. However, two factors are likely to slow the replication of the CECAM experience. First, there are few rural MFIs of comparable strength in Africa. Second, MFIs tend to charge high interest rates and this may render them uncompetitive with banks; the CECAMs enjoyed access to a special government line of credit which has helped them lend at competitive rates.

The combination of lending and regulatory functions may also work with commercial banks. During the 1990s, the government-owned Banco do Brasil directly supervised a group of tied

warehouses which were acting as depositaries for grain financed by the bank (Coulter *et al.*, 1998). Here again, however, it is difficult to replicate the model, as bankers generally wish to confine themselves to banking and are reluctant to get involved with the warehousing business. Few are willing, like Banco do Brasil, to set up their own structure for supervising warehouses. Moreover, tied warehouses of this kind are generally closed to lending by outside parties, and this may restrict their ability to attract deposits.

Promoting the WRS: making things happen

Entirely home-grown national WRS have emerged in countries with strong commercial farming, such as the Republic of South Africa and Zimbabwe prior to 2001. Elsewhere in Africa, donor-funded projects have been predominant in promoting WRS. This is unsurprising, because smallholder farmers are too dispersed to take the initiative in establishing national systems. Moreover, in the absence of public or donor support, other stakeholders, such as banks and traders, generally restrict themselves to CMAs, which are less institutionally challenging.

It should therefore be recognised that WRS are to a significant extent a 'public good', and that the skills of the promoting entities are crucial to their uptake. At the same time, support services that are highly dependent on donor support run the risk of becoming artificial and not developing local roots. Based on the experience of recent years, we can offer some guidelines for success.

First and foremost, the entity will need to work closely with, and stimulate initiative by, the private stakeholders who stand to gain through creation of the new system. The more successful examples described here have all depended on strong private initiative. These players will, in turn, need at least tacit support of their governments, and preferably explicit backing in the policy and legal spheres.

Funding arrangements will need to be very flexible, so that support is provided where the response of local stakeholders is strong and coherent, and pull back where it is not. This can be challenging, because funding commitment sometimes creates a momentum of its own, regardless of developments on the ground. Sometimes several donors will be seeking to assist the development of local agricultural markets, and they should do all possible to harmonise agendas and work together in support of local stakeholders. This is particularly important with regulated systems, which are likely to require a single set of rules for the country concerned.

Promoters will need to focus on the key requirements discussed in this paper - establishing trust in the system, economies of scale, a supportive policy environment and a strong legal basis. Lastly, they should work hard to define a clear exit strategy and a pathway to full local sustainability.

References

- Anon. 2006. *Indiana Grain Buyers & Warehouse Licensing Agency*.
www.in.gov/igbwla/brochures/igbwla.html
- Bass, J. and Henderson, K. 2000. *Warehouse Receipts: Financing Agricultural Producers*. Technical Note No. 5 from the conference on 'Advancing Microfinance in Rural West Africa', Bamako, Mali, organised with support of the USAID Office for Microenterprise Development.

- Coulter, J.P. 2005. 'Making the transition to a market-based grain market system.' DFID/World Bank Workshop on Food Price Risk Management, Washington, 28 February-1 March 2005. www.passlivelivelihoods.org.uk/default.asp?project_id=240&nc=4921
- Coulter, J.P. and Onumah, G.E. 2002. The role of warehouse receipt systems in enhanced commodity marketing and rural livelihoods in Africa. *Food Policy* 27(4).
- Coulter, J.P. and Shepherd, A.W. 1995. *Inventory Credit: An Approach to Developing Agricultural Markets*. FAO Agricultural Services Bulletin No. 120. Food and Agriculture Organization, Rome.
- Coulter, J.P., de Sousa, E. and Martines, J. 1998. *Brazilian Experience with Grain Warehousing Services and Associated Marketing Tools*. Report commissioned by the DFID Crop Post-Harvest Research Programme. Department for International Development, London.
- Fraslin, J-H. 2002. *CECAM: A Cooperative Agricultural Financial Institution Providing Credit Adapted to Farmers' Demand in Madagascar*. Case study prepared for 'Paving the Way Forward for Rural Finance', an International Conference on Best Practices. Sponsored by USAID and hosted by BASIS/CRSP and WOCCU, 3-5 June, Washington, DC, USA.
- Fraslin, J.-H. 2005. 'Une expérience de warrantage à Madagascar. Le Crédit Grenier Commun Villageois (GCV) des CECAM (Caisses d'Épargne et de Crédit Mutuels).' Paper presented at the Methodological Capitalisation Workshop on Inventory Credit, Niamey, 2-3 February 2005.
- Kwadzo, G. T.-M. 2000. Inventory credit: a financial product in Ghana. Paper presented at a conference on Advancing Micro-Finance in Rural West Africa, Bamako, Mali, 22-25 February.
- Lacroix, R. and Varangis, P. 1996. Using warehouse receipts in developing and transition economies. *Finance and Development*, September, 36-39.
- Martin, E. and Bryde, P. 1998. 'Grain receipts in economies in transition; an introduction to financing of warehouse receipts.' Prepared for OECD Expert Meeting on Agricultural Finance and Credit Infrastructure in Transition Economies. Mimeo.
- Walker, D.J., Coulter, J.P. and Hodges, R.G. 2005. 'Policy implications arising from the development impact of local and regional procurement of food aid.' Position paper prepared for UK DFID EC-PREP Programme. Department for International Development, London.

Kenya Agricultural Commodity Exchange – linking smallholder farmers in Kenya to better markets through market information

Adrian Mukhebi (KACE, Kenya)

The Kenya Agricultural Commodity Exchange Limited (KACE) has developed and piloted a simple, low-cost MIS to provide relevant and timely market information targeted at smallholder farmers. The MIS uses modern ICTs to collect, process, update and disseminate market information, so that farmers can negotiate for a better price in the market place. The KACE MIS is designed to disseminate market information and link the farmer to people in the market chains, including other farmers, traders, commodity dealers, processors, exporters and importers. The components of the KACE MIS include (i) rural market-based market information points (MIPs); (ii) mobile phone short messaging service (SMS); (iii) interactive voice response (IVR) service; (iv) Internet; and (v) radio. To provide for long-term sustainability of the MIS, plans are under way to involve beneficiaries as franchisees for the operation of MIPs as commercial entities. In addition, revenue-sharing agreements have been established between KACE and service providers who charge for information such as SMS.

KACE services

KACE (www.kacekenya.com) is a private-sector firm launched in Nairobi, Kenya in 1997, to provide two services targeted at smallholder farmers: to link farmers to markets through matching commodity offers to sell and bids to buy; and to provide relevant and timely market information. Market information includes commodity prices in different markets in Kenyan, regional and international markets, commodity offers and bids (in quantity, quality, packaging, timing), transport services and costs.

Lack of relevant and timely market information greatly disadvantages smallholder farmers in the market place, and reduces their access to better markets and better prices. As a result, farmers are often exploited by middlemen in local markets who offer relatively low prices, sometimes below production costs. In addition, farmers either remain ignorant of better market opportunities, or face high transaction costs in trying to access new markets. For any one crop, the marketing chain often consists of multiple middlemen, each taking a margin. The combination of low prices, lack of access to better markets or high transaction costs result in low farm incomes, keeping the farmer in a vicious cycle of poverty.

Market information is also needed to help farmers decide and choose what commodities to produce, what technologies to apply for production, when to produce, for whom to produce, and when and at what price to sell. Without market information, farmers cannot be efficient in their production or marketing activities.

To provide the two services of market links and market information provision, KACE has developed and piloted a simple low-cost MIS. The MIS involves using ICTs to collect, process, update and disseminate relevant and timely market information to enhance the bargaining power of farmers. The components of the KACE MIS are as follows.

Rural market-based market information points

MIPs are information kiosks located in rural markets, serving as sources of market information. There are currently 15 MIPs, located mainly in western Kenya. An MIP consists of a simple office, with two staff (a manager and an assistant). Those in areas with electrical power and fixed landline telephone service are equipped with a computer, Internet connection and a fax machine. All are supplied with mobile phones. There are boards used to display market information, or used as trading floors for matching offers and bids. KACE Headquarters in Nairobi compiles market information and sends it to MIPs, where it is printed and placed on the boards for users to visit and view freely, with the help of KACE staff.

Mobile phone short messaging service

KACE supports a service to upload market information into the Safaricom Ltd mobile phone service provider network, to which about 3 million Kenyans subscribe. Mobile phone users are then able to download market information through their mobile phone handsets as SMS messages in simple menu-driven steps. KACE has branded this service as SMS Sokoni. Negotiations are under way to develop a similar SMS with the second mobile phone service provider – Celtel Kenya Ltd, which has about 2.5 million subscribers.

Interactive voice response service

KACE has developed this service with the interactive media services. KACE sends updated commodity price information to the interactive media service daily. The service records the information in voice mail, and users access the information by dialling a designated hotline (0900 552055) and listening to the information by following a simple menu. Users have a choice of language, English or Swahili, as well as a choice of commodity or market for which they seek information. KACE has branded this service the Kilimo hotline.

Internet

Farmers and farmers' groups with e-mail addresses, and other clients with Internet connectivity, are included in an electronic KACE database called the Regional Commodity Trade and Information System. The database includes the e-mail addresses of clients and a module of updated market information. The information is sent and received as e-mail messages. Some farmers and commodity buyers receive market information in this way. In addition, KACE has a website (www.kacekenya.com) which it is developing as a virtual library of agricultural information, as well as an electronic commodity trading platform for matching offers and bids.

Radio

Limited KACE market price information is broadcast on national radio, reaching an estimated 5 million listeners a week, many of whom are farmers in rural communities. Liberalisation of the communications sector is still under way in Kenya. The few operating FM stations in rural areas

demand prohibitive charges (about US\$4,000 per 15-minute slot) to broadcast market information. Thus this medium has yet to be developed and exploited for market information dissemination in Kenya.

The market information system

Collecting and processing market information

Market price information (mainly wholesale buying prices) is collected on the following 25 main traded commodities:

- cereals: dry maize, green maize, rice
- pulses: beans, groundnuts, soya beans, pigeonpeas, green grams
- vegetables: cabbages, onions, carrots, tomatoes
- tubers: potatoes
- fruits: bananas, mangos, passion fruits, oranges, avocados
- livestock: milk, beef cattle, meat: goats, sheep, chicken, eggs, fish.

KACE MIP staff visit commodity markets in their areas early in the morning (0500–0700 h) each market day. Using standard KACE data collection sheets, they interview three to six wholesalers to obtain wholesale buying prices for each listed commodity traded in the market. They compute mean prices for the market for that trading day, and send by e-mail, SMS or telephone the information to the KACE Headquarters information technology department to arrive by 0800 h each trading day. They also send the offers and bids collected through client visits to the MIPs since the last reporting submission. The IT department staff then summarise the prices, offers and bids from all the MIPs, and send the information back to each MIP by e-mail or fax. The MIP managers download the information, print it out and place the hard copies on information boards at the MIP for the users to access freely, replacing old information with new each time.

Disseminating market information through MIPs

Users visit the MIPs to receive market information. They read the information placed on the MIP wall or on boards. Users who can not read get assistance from the MIP staff. The information in Table 1 shows a record of direct users (those who visited all KACE MIPs) of the KACE MIS for the period November 2004 to end of October 2005. On average, 810 users visited MIPs every month, an increase of 63% from the previous year (Table 2). Of the total number of users (9,722), 37% were female and 63% male. The number of female users increased by 105% over last year's figure, whereas the increase in the number of male users was 46%. The number of indirect users, those who share or receive market information from direct users, is reckoned to be much higher: every direct user shares information with at least two or three other users.

Table 1: Visitors to MIPs/MICs and Head Office, November 2004-October 2005

Month	Total		Female		Male	
	No.	Cumulative	No.	Cumulative	No.	Cumulative
Nov 04	932	932	296	296	636	636
Dec 04	556	1488	173	469	383	1019
Jan 05	617	2105	230	699	387	1406
Feb 05	717	2822	321	1020	396	1802
Mar 05	640	3462	234	1254	406	2208
Apr 05	1107	4569	425	1679	682	2890
May 05	1169	5738	410	2089	759	3649
Jun 05	847	6585	304	2393	543	4192
Jul 05	807	7392	314	2707	493	4685
Aug 05	886	8278	317	3024	569	5254
Sep 05	783	9061	270	3294	513	5767
Oct 05	661	9722	254	3548	407	6174
Total	9722		3548		6174	
Month average	810		296		515	

In a monitoring and evaluation survey, conducted by KACE in February 2005, of 222 farmers in western Kenya, 84% of farmers were using KACE as source of market information, 47% daily, 35% weekly and 13% monthly. 92% of farmers reported they were happy with KACE information. Also, 52% of traders were using KACE as source of market information.

Table 2: Summary of KACE MIS users, 2003/4 and 2004/5

Users	2003/04	2004/05	% Change, 05/04
Total	5,972	9,722	+63
Female	1,733	3,548	+105
Male	4,239	6,174	+46
Monthly average	498	810	+63

Maize, the Kenyan staple, is one of the most highly traded commodities for which the price is collected and disseminated.

Tables 3 and 4 show dry maize wholesale prices for three markets: Bungoma (rural market), Eldoret (regional market) and Nairobi (national/terminal market) for the 12-month period November 2004 to October 2005. For the three markets, the maize price remained steady between Ksh 14.11 per kg (US\$193 per MT) and Ksh 16.67 per kg (US\$228 per MT) from November 2004 until May 2005. It rose to a maximum of nearly Ksh 18 per kg (US\$247 per MT) in Bungoma and Nairobi in June 2005. It has since declined with the onset of the harvest season to a low of Ksh 8.44 per kg (US\$116 per MT) in Bungoma in October 2005, a 53% drop from the highest price in June.

Table 3: Dry maize wholesale prices (in Ksh per kg) in selected markets in Kenya, Nov 04 to Oct 05			
Month	Nairobi	Eldoret	Bungoma
Nov 04	16.66	16.10	14.11
Dec 04	16.67	15.77	14.58
Jan 05	16.67	15.50	15.50
Feb 05	16.34	14.86	15.83
Mar 05	15.23	14.26	16.44
Apr 05	15.19	14.11	16.42
May 05	16.28	14.48	17.19
Jun 05	17.76	15.42	17.94
Jul 05	15.88	14.98	17.13
Aug 05	14.63	14.00	11.59
Sep 05	13.18	12.58	9.19
Oct 05	12.22	11.19	8.44
Mean	15.56	14.44	14.53
Note: 1 US dollar = Ksh 75/=			

This notable drop in price at harvest time is due to a combination of factors: partly because farmers need cash and must sell; also because farmers do not have sufficient storage to store the crop until the price improves post-harvest; and furthermore, because farmers are not able to access better markets elsewhere, either because they lack market information or are not organised enough to bulk the necessary volumes and quality required. This issue of wide price fluctuations is one of the problems that a warehouse receipt system could address, by enabling farmers to access some cash for their commodity while it is stored to await better post-harvest prices.

Table 4: Summary of mean dry maize wholesale prices in selected markets, 2003/04 and 2004/05

Market	Ksh per kg		% change 2005/04
	2003/04	2004/05	
Nairobi	15.86	15.56	-2.00
Eldoret	14.71	14.44	-2.00
Bungoma	14.42	14.53	+0.8
Mean, Ksh/kg	15.00	14.84	-1.10
Mean, US\$/MT	200	198	-1.00

Disseminating market information through SMS and IVR

Wholesale buying prices, as well as commodity offers and bids collected and summarised as described above, are uploaded into the Safaricom mobile phone network by the KACE IT department, and disseminated as SMS to Safaricom mobile phone subscribers on a daily basis. This same information for some commodities is also available on the IVR service provider, where it is recorded on voice mail and updated through the Kilimo hotline number.

A subscriber pays Ksh 7 (US\$0.10) per SMS of downloaded market information and Ksh 20 (US\$0.27) per IVR call. KACE has revenue-sharing agreements with the service providers. For SMS, KACE receives a share of 10% of the user fee paid to Safaricom, while the KACE share is 20% per IVR call.

Usage of SMS and IVR is shown in Table 5. KACE is conducting a user survey in December 2005 to determine SMS and IVR services, and what changes if any can be implemented to enhance usage.

Table 5: Summary of SMS messages, IVR calls and website hits, 2003/04 and 2004/05

Tool	No. 2003/04	No. 2004/05	% change, 2005/04
SMS	29,891	14,327	-52
IVR	3,015	234	-92
Website	102,301	127,772	+25
Total users	135,207	142,332	+5
Monthly average users	11,267	11,861	+5

Disseminating market information through the Internet

Wholesale buying prices, as well as commodity offers and bids, are daily entered and updated into the Regional Commodity Trade and Information System database and sent to recipients via e-mail by KACE IT staff. The same information is also posted and updated daily at the KACE website for access by subscriber clients visiting the site. The number of website hits at a monthly average of 10,649 was 25% higher than in the previous year.

Disseminating market information through the radio

Wholesale buying prices are sent to the Kenya Broadcasting Corporation (KBC) daily by the IT staff for radio broadcasts Monday–Friday after a news broadcast, at about 16.45 h, and repeated after the 09.00 h news broadcast the following day. As the KBC selects what is read out, only a few commodities are covered in any one broadcast. Exorbitant charges (at least US\$4,000 for a 15-minute slot) are required by KBC to broadcast information covering more commodities than the 1-minute slot they offer for free.

Market linkage service: the commodity exchange

In addition to the provision of market information, market linkage is the second service offered by KACE. In KACE's view, the value of market information lies in facilitating trade links. This is accomplished through direct as well as indirect trade linkages.

Direct trade links: offers and bids

Farmers as well as traders come to place bids (to buy) or offers (to sell) at the MIPs. Specially designed forms are provided for that purpose by the manager. The offers and bids are placed on a bulletin board and also circulated by SMS or e-mail to all other MIPs, MICs and other recipients. A placement fee for an offer or bid at a MIP is Ksh 100 (US\$1.37) paid to KACE (but bids on existing offers are not charged). Two possibilities exist:

- the transaction takes place at the MIP trading floor by matching the bid and offer, and no other charges are paid
- the transaction takes place outside the MIP by MIP staff acting as a broker between seller and buyer. Then a negotiable charge of between 0.5% (for a large volume) and 5% of the value of the transaction is made as income for KACE. This is the direct trade.

Tables 6 and 7 show the volume of direct trade that went through the KACE MIPs for the 12-month period November 2004–October 2005. The total volume was US\$75,366, up 29% from the previous year. Much of the trade was by smallholder farmers selling small quantities of maize worth as little as US\$10 a transaction; and most of the trade occurred between the months of May and October, the maize-harvesting season (maize is the main commodity traded).

Table 6: Value of trade through the KACE MIS, November 2004 to September 2005

Month	US\$	Cumulative US\$
Nov 04	220	220
Dec 04	72	292
Jan 05	1,139	1,431
Feb 05	2,994	4,425
Mar 05	311	4,736
Apr 05	6,349	11,085
May 05	31,885	42,970
Jun 05	10,698	53,669
Jul 05	7,938	61,607
Aug 05	2,671	64,279
Sep 05	9,671	73,949
Oct 05	1,417	75,366
Total	75,366	
Month average	6,281	
Note: 1 US\$ = Ksh 75		

Table 7: Summary of value of trade through the KACE MIS, 2003/04 and 2004/05

	2003/04 US\$	2004/05 US\$	% change, 05/04
Total	58,650	75,366	+29
Month average	4,888	6,281	+29

Indirect trade links

Indirect trade links are those where farmers or traders use KACE market information to trade without passing through KACE. Transactions are concluded outside the MIPs directly between buyers and sellers, often without the knowledge of the MIPs. KACE gets no commission on such transactions. These are the indirect trade links, which are significantly more than the direct trade links. For instance, five MIPs in Bungoma kept track of some offers and bids and what happened to them from October 2004 to November 2005 (for 10 months). The total value of the tracked indirect trade was Ksh 26,113,055 (US\$357,713).

The total trade value reported is certainly grossly underestimated, as sales concluded outside the premises of KACE are rarely reported. In addition, it can be assumed that the provision of market information is reducing spatial arbitrage and bringing about increased market integration, although this has not been documented. KACE is thus correcting an important information externality, but it does not get paid for this important public service.

Measures taken to ensure sustainability of the services

Involvement by beneficiaries and local entrepreneurs

Farmers are being trained and shown how to access and use market information. Once they benefit from it, through better market access and better prices, as pilot results have demonstrated, they will acquire the capacity to seek and access the information without further training from KACE. They will visit and access the information at the MIPs. They will also use mobile phones, which an increasing number of farmers are acquiring, especially on a group basis to share the costs of mobile phone handsets, to access SMS and IVR services.

For further sustainability of the MIS provision, KACE plans to franchise MIPs to local entrepreneurs to operate them on a commercial basis. This will create private-sector operators, who will further develop a wide range of related agricultural marketing and extension services, and ensure long-term financial sustainability. It will also free KACE from intensive management of these centres, and hasten the scaling up of their services.

Financial sustainability through service revenue-sharing

KACE has entered into revenue-sharing agreements with the SMS and IVR service providers. For every SMS message, or IVR call, the user pays for airtime to the mobile phone service provider, or pays for the call to the IVR service provider, who in turn pays KACE an agreed percentage share. KACE will share the revenue so generated with the MIPs to contribute to their financial sustainability. It is planned that when the KACE MIS are fully developed and widely promoted and used by clientele, they will generate sufficient revenue to sustain themselves.

Main challenges

Market information service

- Lack of standard units of measurement: various local units are used in market places for trading. They often do not have uniform volumes or weights, posing a challenge in quoting a price per weight or volume. KACE staff have been trained to convert and report prices per unit weight, e.g. kg; or unit volume, e.g. litre, which is bound to introduce some errors in the data.
- Lack of grades and standards: commodities traded in the market place do not have specified grades and standards against which to provide price quotations. Everything is therefore sold as fair average quality.
- Maintaining the cooperation of respondents to provide price data: some farmers or traders in a given market object to being asked to provide price information over a period of time. KACE staff then have to identify new respondents, or find some incentives for continued

cooperation, such as the supply of market information from other markets, or offering to check the moisture content of grains using moisture meters.

Trade linkage service

- Small quantities of highly varied quality commodities may be offered: this makes it difficult to attract large-volume buyers prepared to pay a premium price for better quality. This increases transaction costs. It can be addressed through collective marketing of commodities by farmers, which KACE and other development farmers are promoting.
- The lack of standard units of measure and grades and standards makes market links difficult. For instance, there is no premium price for superior quality, and sellers have no incentive to improve on quality, which is often required for trade links to better (price) markets. Again, KACE and other partners are promoting collective marketing, where a group of farmers bulks the commodity and improves its quality, including packaging in standard units, before offering for sale.
- Lack of a warehouse receipt system to enable farmers to access some cash or credit from stocks while they await selling at better post-harvest prices.
- Unpredictable government policy: in Kenya the government, through the National Cereals and Produce Board, continues to intervene in grain markets, and this distorts prices and discourages increased private sector participation in commodity markets.

Way forward

There are two major developments that KACE plans to undertake in order to scale up its services: franchising of MIPs to make them financially sustainable; and the development of a physical (and electronic) trading floor in Nairobi, in conjunction with the Kenya Grain Council, which is currently under establishment for the promotion of structured grain trade not only in Kenya but also in the East Africa and COMESA regional markets.

Franchising MIPs

As indicated, plans are under way to franchise MIPs so that they can operate commercially and become financially self-sustaining, but without abandoning their public goods MIS. In this concept, KACE would move further upstream and concentrate on operations in national and regional markets. Franchised MIPs would develop a wide range of services for which demand has been demonstrated, e.g. transport brokerage, warehousing, storage brokerage, weighing services, grading and quality control services, selling mobile phones and airtime, offering Internet services, selling farmer inputs, trading commodities for their own account, etc. The idea is that the franchises become independent, commercially viable local businesses. They would be encouraged to identify and engage in profitable trade opportunities in their areas of operation. KACE would provide training, technical assistance, networking service and quality control, as well as market links to upstream markets (at national and regional market levels).

KACE itself would thus concentrate its activities at a higher aggregation market level, coordinate the market price information service, disseminate the market price and bid-offer information via ICT, work with the cellphone companies, provide market linkage and transparency at the national level, and run its own physical and electronic trading floor in Nairobi.

Agricultural Commodity Exchange for Africa (ACE)

Ian Goggin (ACE, Malawi)

The idea for the formation of the Zimbabwe Agricultural Commodity Exchange (ZIMACE) was first mooted in the early 1990s, when the Government of Zimbabwe embarked on its Economic Structural Adjustment Programme. With the introduction of this programme, the liberalisation of agricultural marketing commenced, and it soon became apparent that an organisation was needed through which the free marketing of agricultural commodities could occur. Out of this, the concept of ZIMACE evolved.

ZIMACE was started by interested parties in the private sector, namely the commercial farmers' union and Edwards and Company, a local firm of stockbrokers, who became shareholders and the financial backers. Subsequently, a board of directors was appointed and tasked with establishing a commodity exchange. Initially, while the administration was being set up, ZIMACE employed brokers who traded for ZIMACE, but from 1 March 1994 blocks of shares were sold, entitling the purchaser to appoint a broker to trade on their behalf. ZIMACE stopped utilising brokers and ceased being actively involved in any trading, and from that date, provided a forum for deals to take place.

Although the Commercial Farmers' Union and Edwards and Company were initially the major shareholders in ZIMACE, this position changed over time. The Commercial Farmers' Union reduced its seat holding from eight to three, while Edwards and Company were no longer seat holders, having held seven seats originally. The balance of the current membership of 28 seats is made up of other organisations, including the Grain Marketing Board, millers, traders, banks, other buyers and broking firms. This membership has changed dramatically since the early days of ZIMACE.

During the process of establishing ZIMACE, the aims and objectives were clearly stated as the need to 'create an orderly internal market which encourages production, allows free movement of goods and rewards good quality'. It was therefore determined that a commodity exchange of the highest integrity should be introduced, available to all the people of Zimbabwe and acceptable international traders, based on an open, free market system for the benefit of producers and consumers. The exchange facilitated the trade of any agricultural commodity provided or desired by consenting parties (willing buyer-willing seller).

ZIMACE, the first ACE to start operating in southern Africa, commenced trading on 1 March 1994. The Zambian ACE followed in June of that year, with the agricultural division of the South African Futures Exchange (SAFEX) opening in January 1995.

There is no doubt that the importance of ZIMACE continued to grow significantly in the local and regional agricultural markets, with considerably more notice being taken of this market internationally. This growth was not without its problems, some of which were predictable, while others were totally unforeseen.

The continued lack of relevant market information, both within Zimbabwe and in the SADC region as a whole, had a major negative impact on the free market. Figures quoted as to crop size, quality and volume in store, and anticipated imports and exports, were inaccurate at best, and at times extremely distorting in the market itself. Also, the lack of support of some of the

larger and more firmly established market-based and -oriented institutions tended to undermine the operations of ZIMACE. Add to this the fact that some ZIMACE members were active in conducting trade off the exchange floor, and the enormity of the challenges faced by ZIMACE at that time begins to emerge. These problems are exacerbated by the fact that central government saw fit to impose price controls on basic foodstuffs, while at the same time doing little or nothing to halt increases in the cost of inputs either to the producer or the end-user.

A decision was taken by the ZIMACE board, after consultation with the members, to enforce an existing provision in the rules making trade across the exchange floor compulsory for members. This was circulated as a resolution of the ZIMACE board, and was further enforced through an amendment, which was incorporated into the rules and regulations of the exchange. Obviously, this did not suit all the members, which resulted in a few of them electing to be 'non-broking members' rather than broking members. Such an election, while not diminishing any of their basic rights or responsibilities as members, required that they utilise the services of a broking member whenever they wished to conduct business across the exchange floor.

ZIMACE continued to provide both a spot and forward market facility, but was unlikely to venture into the futures market. The relatively small volumes of production, together with a lack of speculators and the reluctance of financial institutions to involve themselves in the market, are seen as hindrances to the establishment of a futures market. The most sensible suggestion in this regard would be that the present futures market in South Africa be expanded to include the region as a whole. Indications were that this was already happening, with trade being conducted on SAFEX by some of the ZIMACE brokers, and the Zambian exchange using the SAFEX futures price and incorporating the transport differential into the price quoted in Zambia. As trade barriers are removed, the ability to trade on any of the exchanges within the region will become more practical and realistic, with the will to do so already there, particularly within the private sector.

There are currently eight different contracts trading on ZIMACE, specific to maize, soya beans, groundnuts, sorghum, wheat, cotton and hogs. A general contract applies to all lesser traded commodities. All contracts include details pertaining to the quantity, quality, changeover of ownership and risk, price, payment terms, inspection, transport, delivery (or collection), packaging and *force majeure*. Every deal conducted across the ZIMACE floor is put to contract, which had to be signed by both parties immediately following the trading session. The contracts themselves are legally binding, giving additional security to the parties involved in the deal.

All paperwork relative to deals conducted on ZIMACE was to be completed and lodged with the exchange by midday of the day on which the trade is actually conducted.

The rules and regulations of the exchange governed the manner in which deals were transacted on ZIMACE. Through this mechanism, the integrity of the member companies, and the conduct of their brokers was monitored. The exchange also ensured the maintenance of standards of quality, not only of the commodities themselves, but also of trading practices through these rules and regulations.

In the event of a dispute arising, where the disputing parties are unable to resolve the issue among themselves, the ZIMACE 'rules of arbitration' governed and an arbitration panel reviewed the controversy. The benefit of this arbitration facility is enormous in saving both the time and costs of having to take legal action through a court of law. Initially, there were a large number of arbitrations heard, many being used as test cases by larger organisations. Once rulings were handed down in all these cases and principles established, the swing tended to be towards resolving the dispute between the parties concerned where possible, without resorting to

arbitration. As a result, considerably fewer arbitration hearings were conducted once the 'ground rules' had been established.

ZIMACE succeeded, over the years, in building up a great deal of expertise, with the brokers establishing an increasing number of contacts throughout the world.

The Grain Marketing Board, as already indicated, was made up of members of ZIMACE, and had two major functions to perform. The first was their own commercial operation, while the second was the requirement to purchase the strategic grain reserve on behalf of government. The difficulty with this system was that of separating these two functions. Regrettably, the general understanding was that the Grain Marketing Board set the price of maize in Zimbabwe, whereas this was in fact effectively set by the government in respect of the strategic grain reserve purchases. If the two functions of the Grain Marketing Board had been clearly separated, with the so called 'floor price' attached to the strategic grain reserve and not to the Grain Marketing Board and the purchase of non-strategic grain reserve stock, the situation would have been considerably more transparent, although the need to abolish this system remained a priority. Debate at a number of regional seminars and workshops centred around the need for a regional futures market and a separate spot and forward market. SAFEX would be the obvious answer to part of this need, but it was argued by many participants that Zimbabwe, through ZIMACE, would be ideal for the regional spot and forward market exchange. The geographical location of the country, together with the relative sophistication of the communication and transport networks and the extremely good storage facilities, were all seen as advantages in this regard.

ZIMACE remained the only true exchange functioning in the spot and forward markets in the region until September 2001 when, following legislation introduced in July of that year giving the Grain Marketing Board the sole right to trade in maize and wheat, trade became untenable. ZIMACE has *not* been disbanded, and the members are hopeful that they will be in a position to re-open the exchange at some stage in the future.

The Zambian exchange has to a large extent failed in its efforts in this regard and is still operating as a 'one-man band', with no trading sessions taking place. ZIMACE made great strides in the market and continued to do so, despite the many barriers imposed on it. Its credibility remained high, not only internally, where the views of the exchange were increasingly sought by both the government and private sectors, but also regionally and internationally.

This credibility is reflected in an increase in membership, from four in 1995 to 28 in 1998, before settling at 23. The volume and value of trade conducted continues to grow, as reflected in Table 1, which indicates the total value of trade conducted each trading year, based on the period of April one year through to March the following year, since the inception of ZIMACE.

While ZIMACE went through some uncertain periods, this in itself was not totally unexpected. Advice received from consultants prior to its formation indicated that the exchange could expect a great many ups and downs, particularly during the first 5 years of its operation. This undoubtedly proved to be true, but what emerged from this was a much stronger organisation, whose credibility rose tremendously. There is no doubt that, given the opportunity, ZIMACE will again rise to the occasion and expand, as there remains a huge need for an organisation of this sort in Zimbabwe.

Table 1: Total value of trade conducted each trading year since the inception of ZIMACE

Trading year	US\$ million
1994/95	1.11
1995/96	24.38
1996/97	32.38
1997/98	31.33
1998/99	141.92
1999/2000	253.15
2000/01	677.53
March-June 2001	94.42
Based on the period April of one year to March the following year.	

ACE: its formation and potential role in a liberalised market place

Malawi, like many other countries in Africa, has an economy that is based on, and relies primarily on, agricultural production. In the past, Malawi established a name for the quality of the commodities produced – tea, coffee, groundnuts, rice and chillies, to mention but a few. However, the introduction of marketing boards, their inability to pay a premium for quality product, and a general lack of reliable market information led to a reduction in both the volumes produced and qualities achieved, as there was little or no incentive for farmers to produce or grade what was produced.

A feasibility study conducted in 2004 revealed that the introduction of an ACE in Malawi would improve the marketing of agricultural produce and products in the country, with resultant economic benefits.

Economic and market challenges

The country faces many economic and market challenges. First and foremost, there is a total lack of reliable and accurate market information. While steps have been taken to address this, much still needs to be done, and ACE will supply a great deal of the necessary market information needed in this respect. By declaring sale prices in various parts of Malawi, as well as those other countries with members, and by registering bid and offer prices for commodities, market trends will be established. Add to this the function of the broker, whose duty it is to advise his client, whether buying or selling, as to the best marketing opportunities and when and where these are likely to occur, market participants will be much more empowered than they are at present. The transparency of the market will also provide an opportunity for those unable to conduct their business over the exchange floor to negotiate from a position of strength, having been informed of what the market is doing and what future trends are likely to be.

Many of the benefits will be covered later, but perhaps one of the most significant is the ‘order’ the exchange can bring to the market. Through the establishment of quality standards for each commodity traded, it will be much easier to do business, as the market will be able to identify the grade being offered for sale, attach the known characteristics to that parcel and bid against the offer price on this basis.

Many small-scale farmers have no option but to sell their produce, whether they want to or not, because they have nowhere to store it. The ACE warehouse/silo certificate system will provide an opportunity for them to do so, and will also bring the prospect of generating much-needed liquidity into the agricultural sector. This will also allow for those farmers who do not have access to registered storage to sell their commodities at a fair market price, as there is likely to be less of any specific commodity available in the market at harvest. These documents will afford an opportunity to producers, as well as traders and end-users, to store their goods in an ACE registered storage facility and to be issued a warehouse/silo receipt. This document can then be used to secure a loan using the commodity in store as the collateral.

How the idea of ACE arose

In recent years, the Government of Malawi has relaxed controls on almost all agricultural commodities. Following this, the liberalisation of agricultural marketing commenced, and it soon became apparent that an organisation was needed, through which the free marketing of these agricultural commodities could occur. Out of this need, the concept of ACE was first mooted.

What has necessitated the introduction of an ACE in Malawi?

- poor market information
- lack of available markets
- lack of competition
- no quality standards
- poor communication
- lack of transparency.

What are the potential benefits?

- reliable market information, both pre- and post-harvest
- much-improved market access
- much more competition
- introduction of quality standards
- much-improved communication
- full transparency
- enforceable contracts
- arbitration facility

- more efficient and cost-effective markets.

How can it assist the farming community as a whole, and the small-scale farming sector in particular?

- market information not previously available
- market access - local, regional and international
- more market participants
- higher prices for good quality
- transparent deals and prices made public
- written contracts that are enforceable
- improved communication
- more efficient and cost-effective markets
- warehouse/silo certificates.

What can it do for other sectors within the agricultural industry?

- ability for all sectors to participate
- opportunity for parastatals to participate
- opportunity for transport to be traded
- opportunity for storage to be traded
- opportunity for the seed industry to participate.

What are the potential benefits to the country?

- much improved agricultural markets
- renewed faith in agriculture
- higher production
- fewer imports
- focus on Malawi and the exchange
- more efficient and cost-effective markets.

A brief history of the formation of ACE

ACE was first mooted by the National Smallholder Farmers' Association of Malawi (NASFAM), who identified a need to bring more order to the market place. Although not everyone shared this view at first, recent developments in the local market have resulted in a distinct change in attitude. The development of agricultural industries, not previously in place, has played a considerable part in this change of attitude, and has resulted in a much broader

interest in this new marketing initiative. Ultimately, a board of directors will be appointed and tasked with running the exchange on behalf of its members, made up of companies from the region, initially from Malawi, Zimbabwe and South Africa.

ACE will provide a forum at which deals can take place.

Aims and objectives of ACE

The primary requirement of a successful ACE in a producing country is:

‘an orderly internal market, which encourages production, allows free movement of the goods and rewards quality.’

To this end, it is essential that we establish a commodity exchange of the highest integrity, available to *all* the people of Malawi, and acceptable international traders, based on an open, free market system for the benefit of producers and consumers. The exchange will facilitate the trade of any agricultural commodity provided or desired by any consenting parties. It will also provide price discovery and dissemination - prices are based on the economics of supply and demand and then supplied to the public via the media.

How would an individual or company trade through ACE?

Members of the exchange would appoint brokers to conduct business for them, and it is they who will conduct trade on behalf of their clients, whether they are individuals or companies. The members would get a return through the brokers, who will charge an agreed broking fee to their clients. This will not be set by the exchange, but will be negotiated between the client and the broker, and is usually in the region of 1 or 2% of the value of the contract.

How is ACE financed?

ACE will be set up as a non-profit-making company and will therefore not charge a fee for trade conducted across the exchange floor. It is presently funded by USAID through NASFAM, but will, in time, raise levies against the shareholding companies to meet its annual operating costs. This will also have the effect of encouraging them to utilise the exchange, as they will have a vested interest in it. Additionally, it is intended that members be charged a fee to join the exchange.

What are the plans for ACE?

In addition to the interest shown by local companies, expressions of interest have been received from six companies in Zimbabwe, all of whom were members of the exchange there, as well as one from South Africa. This will give the exchange much more of a regional flavour, with potential to draw additional members from Zambia, Mozambique, Tanzania and Kenya. The plans are to meet the needs of producers and buyers in the region by providing an open, free trading market in those countries that have already expressed an interest, and by further expansion into both the regional and international markets.

Benefits of trading through a commodity exchange

There are many benefits to be gained from trading through an exchange such as ACE, some of which are detailed below.

- Reducing risks to calculated ventures.
- All the deals are transparent, which is certainly not the case in other markets. Prices are published through the news media, assuring both producers and consumers that they are getting the best price available at the time.
- The rules and regulations of ACE govern the manner in which deals are transacted within the exchange. Through this mechanism, the integrity of member companies, and the conduct of their brokers, is monitored.
- In the event of a dispute arising, and where the disputing parties are unable to resolve the issue among themselves, the ACE rules of arbitration govern, and an arbitration board will review the controversy. The benefit of this arbitration facility is enormous in saving both time and the costs involved in having to take legal action through the courts.
- The exchange ensures the maintenance of standards of quality, not only of the commodities themselves, but also of trading practices through its rules and regulations.
- There will be a great deal of expertise on the exchange, and the members located outside Malawi will make access into both regional and international markets considerably easier.
- An exchange such as ACE also provides a very cost-effective marketing system, with the transaction costs involved being as transparent to both buyer and seller as any other details, such as price of the commodity, for example.
- The ACE contracts, which must be signed by both parties and which are legally binding and are required to be lodged at ACE in respect of each deal conducted, give much-needed security to the parties involved in the transaction. These contracts cover the following assurances:
 - quantity
 - quality
 - passing of ownership and risk
 - price
 - payment terms
 - inspection
 - transport
 - delivery and weights
 - packaging and packaging definitions
 - *force majeure*
 - analysis
 - demurrage

- interest
- arbitration.

The current situation in Malawi and other countries in Africa

Some initiatives have been taken already to try to improve market information, and a project under the banner of IDEAA, funded by the Rockefeller Foundation, with the full support of the Ministry of Agriculture, is now functional. While this is a welcome intervention into a market that, until recently, has had no worthwhile market information or intelligence, it nevertheless falls well short of the functions of an ACE. This programme also works in the micro-economic environment, whereas ACE will look at the bigger picture, with millers and other food processors, large traders, broking houses and financial institutions as potential members of the exchange.

I have no doubt that it has benefited the small-scale producer, particularly those with very little to sell, as it has brought buyers and sellers together. However, it has not yet succeeded in getting to the wider audience, and sales are therefore generally conducted within specific areas. What is needed is to expand this concept further, and to attract more buyers and sellers to the market.

There are also indications that the IDEAA initiative has succeeded in improving communication within the farming community, but much still needs to be done in this regard. An exchange provides real-time information, as it is happening, so that all market participants benefit. The most exposed group, and therefore the one that can potentially gain the most, is the small-scale farming sector. By getting the most up-to-date price and market information, even if they are unable to trade across the exchange floor for any reason, farmers can still negotiate a better price with buyers, based on the knowledge they have.

Rationale

The agricultural industry has indicated that it is anxious to get some order into the market. Farmers are experiencing difficulty in identifying and accessing markets; buyers are concerned at the number of contracts that are broken; and all sectors are concerned with quality issues. The cost of doing business in Malawi remains high, with checks having to be made on each bag delivered, processors having to run the commodities through the manufacturing process a number of times due to the large variation in pip sizes, and the quality desired is often mixed with poorer grades. A commodity exchange is able to address all these concerns by ensuring the maintenance of standards. In its simplest form, a commodity exchange provides a venue at which buyers and sellers are brought together to conduct business, normally through a group of registered brokers. A properly run exchange should accommodate people active in the production, trade, processing and consumption of commodities, and reduce their costs of doing business:

- market forces should determine prices
- there should be many participants in the market – both buying and selling
- there should be strong farmer support, preferably including commercial farmers
- substantial volumes should be traded, allowing a minimum of three brokers to sustain their operations.

It is also important to have a clear understanding of the role of a broker, and how this differs from that of a trader. In simple terms, a broker is an individual who conducts deals across the exchange floor on behalf of a buyer or seller, acting solely on his client's behalf, and who relies solely on commissions for his/her income. A trader, on the other hand, is someone who takes a position in the market and is directly involved in the purchase and sale of the commodity concerned, with a view to making a margin between the buying and selling prices. The margin made is not known by the seller at any time.

Integrity and transparency are the cornerstones of the system. Trading sessions are open for public viewing, all deals are published, and closing prices are broadcast on a daily basis. The integrity of member companies is monitored for proscribed practice, such as doing deals outside the view of all parties on the trading floor, market manipulation and 'front-running'. If the system is correctly managed, both producers and consumers (buyers/end-users) can be assured that they are getting the most advantageous possible price. Indeed the success of ZIMACE – an increase in trading volume from US\$1.1 million in 1994 to US\$677 million in 2001 – is founded on the generalised perception of integrity among the membership and the public in general.

Agricultural commodity exchanges have greatly improved trading practices in many countries, and have brought more formality to trading methods, enhancing market transparency while in some cases improving the quality of commodities traded. Many of the parties expressing interest from outside Malawi have done so on the basis that the exchange will ease the existing problems with trade. Indeed, one large trader indicated that he would be keen to purchase the entire Malawian groundnut crop, provided he could do so through an institution such as ACE.

Everything noted above will contribute to assisting small-scale farmers. However, perhaps one point that has not been emphasised sufficiently is contained in the contracts, and this is the price payable, together with the date of that payment, which will enable farmers to plan based on given facts. In time, I believe the market will develop to the point where forward contracts, and delivery at a future date at a guaranteed price with pre-arranged finance as part of the package, will become more common, which will again benefit the farming sector.

Insofar as other sectors in the agricultural industry are concerned, there will be opportunities to buy and sell fertiliser and other inputs, transport, storage and other items related to farming, such as seeds and irrigation equipment. This will result in more competitive prices, with the resultant benefits to the agricultural market. In turn, this will have a knock-on effect of giving much more accurate information as to what might be available in any given commodity or service, irrespective of who owns it, based on much more reliable data.

The potential benefits to the country and the region as a whole are many and varied. One, which perhaps might be overlooked, is the focus that will be placed on Malawi and the region as a result of a successful regional commodity exchange being operated from here. There is already a great deal of awareness, as evidenced by the interest shown from both Zimbabwe and South Africa, and the potential to expand further. It will also provide increased opportunities for the country itself to become more involved in the agricultural markets, by utilising the expertise available through the exchange. Additionally, there will be some income generation into the economy as a result of the joining and annual fees payable by all members.

This is a very exciting project that will benefit all agricultural and agribusiness sectors in Malawi by making the trade in agricultural products more professional, opening up new markets, bringing market information and transparency to price formation and, through the warehouse receipt feature, improving access to capital.

The establishment of an agricultural commodity exchange in South Africa

Rod Gravelet-Blondin (SAFEX, South Africa)

The agricultural derivatives market in South Africa was first established as the Agricultural Markets Division of the South African Futures Exchange (SAFEX) as a result of the deregulation of the agricultural marketing sector in South Africa. The fact that the government moved out of the price-determination function and allowed agricultural prices to be based on the economic factors of demand and supply meant the introduction of price risk into the agricultural marketing equation. The agricultural derivatives market was established to provide all participants in the market with an efficient price risk-management facility and an effective price-discovery mechanism. The market was established on private-sector initiative by way of the compilation of a business plan (prospectus) and the subsequent selling of trading rights to the private sector to raise the required start-up capital. The role of the government in this was solely the provision of the enabling environment to allow the establishment of the market, and the fact that the market was left to operate without any interference. The regulation of the market was introduced and is operated by the Financial Services Board that administers the relevant acts under which exchange licences are granted and exchange rules are regulated.

In August 2001, SAFEX was acquired by the then Johannesburg Stock Exchange (JSE), and the agricultural derivatives market in South Africa is now operated as the agricultural products division of the JSE. The membership structure of the market changed in July 2005, when the JSE demutualised and ownership of the exchange was effectively separated from the trading rights of the exchange. This is in line with many exchanges worldwide.

It is important to note the exchange in South Africa was established as a derivative market trading futures and options contracts, and not spot or physical commodities.

Success factors

Clear objective – price volatility

The market was established with a clear objective: to provide all participants in the market with an efficient price risk-management facility and an effective price-discovery mechanism. It is important to know the reason for the establishment of a market, and that objective must be linked to a need in the market. A market must add value to the process and should be economically viable or sustainable.

Consistent policy – agriculture

In order for a derivatives market to work in agriculture, there should be ‘consistency in inconsistency’ – in other words, government policy regarding price determination and trade policy should be consistent. The objective or reason for the establishment of the market must continue to exist so that value can continue to be added to the agricultural marketing process.

Credible environment – financial, legal

There must be a high level of integrity and trust in the financial and legal framework in which the market is to be established. Participants entering contracts according to rules need to know that the contracts will be honoured, and that if not, that there is competent legal recourse to ensure adherence. Similarly, financial transactions must be secure. A major contribution towards the successful establishment of the market in South Africa was the support and role of the financial sector, particularly as regards the derivatives market, because the clearing structure was provided by the large retail banks.

Compatible infrastructure – storage, transport

In any agricultural commodity market, product needs to be stored and moved (unless it is a highly localised spot market). Storage and transport infrastructure that can be trusted as secure, safe and efficient should be in place. This has a great impact on the extent to which a market can operate, and the high quality of infrastructure in South Africa contributed to the success of the market.

Clear and consistent standards

Although vital to the operation of a derivatives market, the compilation and consistent application of clear standards is also important to the operation of any agricultural market. The buyer needs to know what he or she is buying, particularly if they do not have sight of the product.

Concrete regulations rules

All participants in a market need to understand and abide by the rules of the market, which need to be clear and consistently applied. Obviously, rules governing a derivative market will be more detailed and comprehensive than those of a spot market, but the important issue is that rules exist and are applied consistently. It is important that some dispute-resolution mechanism exists, as well as some form of agreed legal contract, to complement and enforce the rules where necessary.

Consultative development – participants/members

In order to add value to the marketing process, the market must meet a need. In order to establish if the need is real or perceived, it is necessary that a consultative process take place with participants in the market. This does not guarantee success, but it does go a long way to adding to it. Participation in the market structure is vital to success and market participation is enhanced, if the development of the market results from consultation.

Creating the opportunity

The establishment of the derivatives market in South Africa enabled members, initially, and brokers, subsequently, to act as agents on the market. This created opportunity to do business, and one cannot underestimate the profit motive in the establishment and success of an exchange. The opportunity that is created must be supported by the factors mentioned above.

Creative marketing/training

The more complicated the market structure, the more extensive and detailed the marketing and training programme, but it is vital that participants are fully aware of the benefits of the market and the potential pitfalls. Marketing and training are never complete, but must be ongoing. Much of the success in South Africa can be attributed to person-to-person marketing and training across the country. It is important to include the politicians, the administrators (government) and the media in marketing and education.

Committed staff

This could be classed as a 'soft' issue, but dedicated, hard-working staff, who believe in what they are doing, can make or break the establishment of a market. Incentives can be looked at and can be helpful as motivation, but belief in a project cannot be bought.

The future

Any business organisation that does not remain effective, efficient and focused will not survive, unless it is supported for non-economic purposes. An agricultural market needs to be effective. A market that does not add value to the marketing process will also find it difficult to continue. There will be costs in using a market structure, but the value of using the market structures must outweigh the costs thereof.

A particular challenge facing the derivatives market in South Africa is to make a market that is primarily devised for large commercial farmers relevant and applicable to the smaller subsistence farmers in the country. Obviously, the fact that the derivatives market establishes an efficient price signal is of enormous benefit to all farmers, as it clearly signals the true economic value of the product, but directly accessing the market to benefit from the price risk-management facilities is difficult for smaller farmers.

If the government policy in South Africa changes to re-introduce centralised price determination, the *raison d'être* for the derivatives market will disappear. It is important that policy-makers are aware of the mechanism of a market and are not intimidated by price fluctuations.

Prospects for a regional agricultural derivatives market

One of the questions that we were asked in coming to the CTA meeting was the issue of why SAFEX is not expanding into other countries. I have outlined in this section some ideas for the development of a Southern African regional trading platform. This is an opportunity that is still at the conceptual stage, and the reasons for not taking this forward are due to questions concerning finding the right partners, the right timing and the right financing; these issues, along with the opportunities, are outlined below.

The Southern African region, whether defined as the five countries of the Southern African customs union or the larger 15-country Southern African Development Community (SADC), is an agricultural resource-based regional economy. This has prompted the view that economic development in the region should be agricultural resource-based in order to be sustainable. However, the nature of agriculture is such that it is subject to volatile pricing patterns and provides, according to many analysts, an unstable and unsuitable basis on which to develop the

economy. It is now widely accepted that the preferred route to stabilise the impact of volatile commodity prices on an economy is to facilitate access to a derivatives market. Not only can participants in the agricultural economy benefit from the advantages of the price risk-management facilities offered by a futures market, but the economy itself can benefit from the price-discovery function that is generated by an efficient market.

In early 1995, SAFEX established an independent membership-based division, the agricultural markets division, to trade derivative instruments on agricultural commodities. The initial contracts introduced, based on chilled beef and potatoes, were not successful; however the subsequent contracts on white and yellow maize, wheat and sunflower seeds have been highly successful. Following the takeover of SAFEX by the JSE Securities Exchange in August 2001, agricultural derivative instruments are presently traded on the agricultural products division of the JSE Securities Exchange.

Fundamentals for a successful derivatives market

It is widely accepted that, for a viable commodity derivatives exchange to be established, the following conditions should exist.

- Supply and demand for the commodity concerned has to be large; there need to be many potential participants; and the commodity must be a fairly important component of these people's operations. Some literature states that there has to be a well functioning spot market and that before futures contracts can be introduced, forward contracts have to be actively traded. This actually does not correspond to the ways that commodity exchanges have developed historically (even in recent history, e.g. electricity) – they often helped spot and forward markets to develop, rather than being introduced only after these markets already functioned well.
- The commodity traded must be well standardised, with grades widely accepted by commercial parties, and independent entities able to evaluate grades. Exchange trade is easier if a commodity is storable.
- Pricing must be left to market forces. This means that there should be little likelihood of manipulation by:
 - private interests (note, in particular, the need to avoid control of a small number of people over transport and storage facilities)
 - government entities – either deliberate, for the commercial interest of government trading entities or the private interest of government officials, or because of a sudden change in government policy. The latter implies that there has to be a commitment from the government to a rule-based rather than arbitrary policy on the pricing and trade of the commodities to be traded on an exchange.
- The exchange should be supported by major commercial interests. This does not just mean that many companies should use the market for hedging (or if they wish, speculation), but also that:
 - they are willing to use the exchange price as reference for their physical trading

- even if they do not trade on the exchange, they should not feel left out – e.g. farmers should feel the exchange is good for them. This requires an educational effort by the exchange, and good public relations.
- Well functioning and accessible services and infrastructure facilities are necessary, for example good access roads, availability of transport companies, weight bridges, quality control services, an efficient administration, warehousing, telecommunications, etc. (if the warehouses or transport companies are controlled by only a few companies and not available for public use, they are of little use from the exchange's point of view).
- Judicious government support is required – including a willingness to adopt suitable new regulation/legislation and appropriate oversight over trade on the exchange.
- Free market prices must be volatile enough to create large price risks.
- There should be enough potential interest from the speculative community.
- Well functioning and fully trusted clearing operations are needed, whereby trades are guaranteed and margin money/deposits are held with integrity.

Existence of fundamentals in the region

The *modus operandi* will be to look very briefly at each of the above listed conditions (fundamentals) to determine whether and to what extent they exist in the region as a unit. The viability, or not, of a regional agricultural derivatives exchange will be based thereon. Due to the nature of livestock and livestock products, the investigation will concentrate on field crops.

- During average production years, South Africa produces approximately 50% of the maize in the region, 50% of the sunflower seed, 50% of the wheat and 40% of the soya beans. Thus, purely on a volume basis, a regional derivatives exchange could not only serve a large percentage of field crop production in the region, but the increased volume of underlying product could increase the liquidity of the contracts already successfully traded on the Agricultural Products Division of the JSE Securities Exchange. The only other products that are produced in any volume are barley, with almost 80% of the regional production produced in Ethiopia; and sorghum, with Ethiopia accounting for 50% of regional production. It can be safely assumed that there are many potential participants and that the commodities represent an important component of the participants' operations.
- It is advisable that, for a regional derivatives market to function to its full potential, the commodity traded should not only be subject to good standardisation, but that such standardisation also be consistent across the region. The standardisation of potential products across the region that could be traded on a regional derivatives market at present is such that it would be very difficult to fully utilise the potential of a market under present conditions. It would be possible to hedge (on condition that there was a consistent correlation between domestic and exchange prices), but if the grading was not standardised, delivery in fulfilment of a futures contract would be limited to long position holders taking delivery from a single point.
- The agricultural pricing policies of the various potential participant countries in a regional derivatives exchange at present is diverse, and not without the possibility of manipulation by either private or government entities. It is essential for a regional derivatives exchange that

government policies as regards agricultural marketing be consistent, and not subject to sudden change.

- It is believed that a regional derivatives exchange would be supported by the major commercial interests throughout the region, and that the exchange price would indeed serve as the reference for physical trading. A more difficult area would possibly be structuring the exchange to serve the various levels of participants throughout the region.
- Infrastructure facilities would not only need to be well functioning and services accessible, but there would need to be an acceptable level of consistency across participating countries. At present, it seems that this is not the case, and the benefit and operation of a regional derivatives exchange would be severely curtailed as a result.
- It is difficult to gauge the level of support of the various possible participant governments for a regional derivatives exchange and the corresponding willingness to adopt/enact appropriate new legislation. However, it is assumed that if support were forthcoming, the appropriate legislation would follow. Present regional activities regarding such appropriate legislation seem to indicate, however, that support for such a regional derivatives exchange is not high on the agenda.
- Without interventionist and stabilisation policies, it can be assumed that the free market prices of the possible products that would be traded on a regional exchange would indeed be volatile and create price risk, with the resultant need to manage such price risk.
- It is difficult to assess whether speculative interest would exist, but generally it can be assumed that speculative interest will be attached to a well run market that has the necessary integrity. A difficulty would be the understanding of the role of speculation in the price formation of agricultural products, especially those closely connected to staple food products.
- As with the difficulties with the present lack of compatible agricultural policies within the region, there is also a lack of compatible financial policies. A regional derivatives market would require an understanding of the necessary money market flows associated with the clearing operation of a derivatives market, as well as the smooth and uninterrupted flow of such funds.

Conclusions

The above analysis consists of a brief and somewhat cursory introductory review of the possibilities of the establishment of a regional agricultural derivatives market. Although the product base and free market price fluctuations would certainly support the case for the establishment of such a market, it appears that, at present, there are major issues militating against such a development.

These major issues are incompatibility in:

- grading standards
- agricultural policy as regards marketing of agricultural products
- infrastructure
- financial policy.

A concerted effort, concentrating particularly on policy issues, agricultural and financial, by participating countries, would be required to move the process forward. Obviously, a major education/training effort would also be required.

A step forward could possibly involve the greater regional utilisation of the Agricultural Products Division of the JSE by the surrounding countries. Although this would not provide the full benefits of a derivatives market because it would preclude delivery, it would assist in developing the understanding of the operations of a derivatives market and would provide a long hedging opportunity. The first step in this direction would be the development of a clear understanding of, and the smooth logistical flow for, financial obligations relating to the market.

Main questions and recommendations

Main questions and recommendations

At the end of the e-discussion and at the beginning of the conference, a summary of comments was presented. As part of this initial presentation at the conference, a number of questions were posed to attendees, as shown below. These questions were highlighted so that attendees could consider these issues during the conference in the context of the information that was being presented.

- **Sequencing:** Is sequencing important?
- **Conditions:** Are there any preconditions necessary for these strategies to work in support of smallholder farmer?
- **Context:** In what ways do the marketing tools and strategies presented in this conference need to be adapted to work effectively in different ACP countries?
- **Ownership/leadership:** Who should introduce these strategies? How should they be funded?
- **Linkages:** Should they be introduced as single entities or clustered to make efficiency gains?
- **Priorities:** Where should CTA invest in regard to ACP marketing support?

The questions were related to the various types of marketing institutions, strategies and tools that are being used to assist in improving market co-ordination and performance in ACP countries, see list below.

Strategies, tools and institutions

- Marketing policy support (strategy)
- Market development analysis (tool)
- Farmers' organisation (strategy)
- Market information service (institution)
- Market intelligence (tool)
- Grades and standards (strategy)
- Establishing a legal framework for trade (strategy)
- Establishing a and integrating financial instruments (tools)
- Support to private sector associations (strategy)
- Warehouse receipt system (institution)
- Commodity exchange (institution)
- Advocacy and capacity-building, networking (strategy)

The conference was structured according to this list, such that attendees could evaluate the role, effectiveness and usefulness of each of these factors for specific types of market actors, but especially for smallholder farmers, who make up the bulk of the agricultural sector. The

conference attendees were also asked to consider these factors in regard to the other people in the marketing of agricultural produce, including large-scale farmers, informal traders, formal traders from the private sector, and people from the public sector including government, donors and NGOs. Based on this perspective, the groups were asked the following questions.

Questions and recommendations from marketing information services

- Who should own, manage and control MIS?
- How can partnerships be developed to sustain them?
- What should be the priorities for CTA?

Due to the nature of the meeting and wide range of views presented, we felt it was best not to present all the comments made, but to synthesise comments into some key points.

Management

The group suggested that the management of an MIS should not be solely the domain of the government, as evidence has shown that this can be detrimental to emerging or pilot services.

Ownership and partnerships

The group felt that for MIS to develop in a sustainable and effective manner and also meet the needs of a range of people from the agricultural sector, ownership should not be the exclusive domain of any one entity. An MIS should involve, if possible, a degree of collaboration and competition between people from government, private sector, development groups and public-sector agencies. To make better decisions on partnerships, the group suggested that, for any situation, the roles and responsibilities of the various people, and the needs, should be analysed, using one of the analytical or sampling frameworks below. This would probably need to be done on a case-by-case basis.

Table 1: Analytical framework to evaluate roles and responsibilities for the development of a market institution				
	Government	Consultants/NGOs	Farmers	Traders
Who pays?				
Who plans and makes decisions?				
Who implements?				
Who uses?				
Who owns the outputs?				

Table 2: Analytical framework to evaluate roles and responsibilities

Table 2: Analytical framework to evaluate roles and responsibilities			
Who implements?	Who pays?		
	What is done?		
	What information?		
	Which clients?		
	Which outputs?		
	Quality control?		

CTA priorities

To support the development of sustainable MIS, it was felt that CTA could play a vital role in clarifying some basic issues and then investing, with participants, in long-term projects to facilitate model options.

Basic research in the area of MIS should include the following.

- **Study:** An evaluation to determine the value, utility and benefits of MIS in ACP countries. This study would select three or four countries from Africa and the Caribbean, to determine how MIS support the needs of specific types of client. This type of analysis should identify what is working well, what is not working well, and the reasons for this. At present, it is unclear to many donors whether market information is a genuine public good, or should be partially or entirely covered by the users and/or market-chain operatives. This study should also investigate the question of ownership, how it is being implemented at present and which types of management system provide the best services. What are the possibilities for greater autonomy in implementation of an MIS?
- **Study:** One issue that was repeatedly raised was that of the future role of the mobile phone system for interactive and low-cost MIS. This issue was raised in relation to the *e-choupal* system in India and the rapid deployment of mobile phone infrastructure in most ACP countries, relative to the slower outreach of Internet access.
- **Support:** Based on the results from an evaluation of MIS, CTA would be well placed to share best practices in how to design and implement MIS.
- **Support:** Capacity building in the provision and analysis of market data to provide greater use of the information for specific target groups.
- **Support:** Based on the findings from the impact assessment of MIS, CTA should develop an advocacy and policy dialogue process with key stakeholders in selected countries with recommendations on the importance and value of MIS and how they may be integrated.

Questions and recommendations from marketing institutions

- Is sequencing important in introducing the elements of tools, strategies and institutions?
- Are there any preconditions necessary for implementing the market-strengthening tools, strategies and institutions discussed at this meeting?
- Which are the most appropriate groupings for supporting and sustaining these tools, strategies and institutions?
- What are strategies that can be used to increase the prospects of sustainability of these new developments?
- What should be CTA's priorities in these areas?

Sequencing

In one of the groups, 11 out of 12 people felt that the sequencing of investments in market institutions was a useful approach, and that making investments in the order presented at the conference would be more effective. The group suggested that investments made in an *ad hoc* or unplanned manner were likely to lead to either failure or poor performance of the said strategy. Several examples of this were cited from the group. However, although sequencing was a desirable outcome, the group also indicated some caveats, in that each country should be considered in regard to the location and its contextual situation. It may be that some agricultural sectors are prime candidates for support, such as online futures sales, whereas other parts of the economy would only benefit from more basic types of marketing support. The other concern was in relation to the practicalities of attempting to introduce and integrate ideas in a measured and sequenced fashion, due to the desires of multiple participants and agencies involved in decision-making and investment. Hence, if a government or donor specifically wanted a new institution to be supported, this would happen regardless of sequencing logic. The lack of any informed analysis or profiling of countries in terms of the marketing status may also preclude a logical development pathway.

Preconditions and profiling

The group felt that, for the first set of strategies, tools and institutions mentioned in the list, there were few preconditions that would be a major impediment to the success of interventions at these levels. The first three could be set up independently and not have adverse effects on each other:

- marketing policy support (strategy)
- market development analysis (tool)
- farmers' organisation (strategy).

For the next three areas of marketing intervention, it was felt that their effectiveness and/or performance would be significantly improved if interventions 1-3 were in place. However, even if they were not, it would not necessarily make their usefulness redundant:

- market information service (institution)
- market intelligence (tool)
- grades and standards (strategy).

As an example, marketing information would be effective in the absence of a marketing policy or a series of widely known marketing studies, and even in a situation where farmers were not well organised. However, there would be considerable benefits in the utility of market information, if farmers were well organised and acting on the advice of clear marketing studies and strategies.

Effective development of several of the complex marketing institutions, such as warehouse receipt systems and commodity exchanges, that stipulate some form of profiling method, would be a useful starting point from which advice could be offered by ACP countries on their strategies for developing marketing support to offer advice on appropriate marketing intervention linked to:

- best practice
- case studies
- partners
- timing
- context
- location
- experience.

Partnerships

The question of who should be involved in developing marketing institutions was addressed by the group through Table 3.

Table 3: Who should be involved in developing marketing institutions?							
	Government	Donor	Regional	Private sector	NGOs	Universities	Consultants
Policy	* * *	* * *	*	*	*	*	*
Analysis	*			*		*	*
Farmers' organisations					* * *		

Sustainability

The issue of sustainability was also addressed by the group, who emphasised the following key points:

- need to have in place appropriate institutional arrangements
- need to avoid all sorts of opportunistic strategies
- government may be required in some cases for public goods
- private sector must pay for everything
- training and universities should play a major role.

CTA priorities

Because of its networks of partners in ACP countries, the group felt that CTA should be in the right position to provide information on best practices through the dissemination of case studies from the six ACP regions. Facilitating dialogue and alliances among ACP partners on strengthening market institutions was another priority area highlighted by the group discussions.

Table 4: Synthesis of workshop's key messages

Strength of message	Nature/focus of message	Strategy implications	Implications for CTA
Very strong - consensus - clearly expressed (must)	Availability of timely, accurate and relevant market information is a critical success factor.	Build on anecdotal evidence to obtain more objective verifiable evidence of proof of relevance and impact of information.	CTA requested to support evaluation of existing MIS.
	Addressing the (information) needs of smallholder farmers is paramount (direct efforts).	Channel support to MIS through farmers and farmers' associations.	CTA may modify its support strategy for MIS development.
	Important to recognise and understand regional and, to a lesser extent, national differences in the state of development of MIS and other market instruments.	Knowledge/information sharing needed.	CTA to promote networking at ACP level (web-based as well as through publications and other means).
Strong (should)	Development of MIS and other market instruments should be sequential.	Training, knowledge sharing and consultations may be needed.	CTA can contribute as appropriate (possibly including advocacy).
	MIS should be combined with other services (advice, advocacy, financial, legal, insurance, etc.)	Better understanding of the enabling environment and preconditions.	Information dissemination by CTA.
	Public-private sector collaboration recommended.	Concern for sustainability can influence type of collaboration.	Information dissemination by CTA.
Dilute (may/may not)	Ownership of MIS and other instruments may/may not be so important.	Further consultation need on priorities and overall approach to development.	CTA could work on consensus-building between stakeholders.
	Market information may/may not rank very high in relation to other farmer needs.	Further consultation need on priorities and overall approach to development.	CTA could work on consensus-building between stakeholders and priority setting.
	Further R&D may/may not be required to guide the development of strategies and best practices for establishing and maintaining MIS and other market instruments.	Further consultation needed on priorities and overall approach to development.	CTA could work on consensus-building between stakeholders and priority setting.

Opportunities for CTA-led R&D interventions

Based on the presentations of the meeting and recommendations from the discussion groups, the following section provides some critical areas of research and development, in which CTA could play a leading role in assisting the marketing development of ACP countries over the next 5-year period.

Due to the increasing economic pressure caused by events such as globalisation and market reform, ACP countries need to find innovative means and methods to improve their market performance. CTA could assist in this area by playing a strategic role in niche pieces of research and developmental investment to combine specialised information with new ICT technologies to improve the competitiveness and innovation within the agricultural sector of ACP countries. Having identified niche opportunities, CTA should develop these new areas of intervention beyond the pilot level to have a significant and sustained impact on improving marketing institutions in ACP countries.

Areas of intervention identified at this meeting include the following.

Research and development options

Market information

Undertake an impact study of different types of MIS currently being used in selected ACP countries to evaluate the value, utility and quality of these services in terms of client needs, accuracy, timeliness and accessibility. This study should determine the institutions best placed to own and implement such services and how they can be supported financially. The study should also clearly outline costs and benefits that accrue from the services. The study should compare services being administered in ACP countries having small (10-15 million), medium (20-40 million) and large (60 million +) populations, those with strong and weak ICT capacity and having different levels of market engagement at the local, national, regional and international levels.

Outcomes of this research

- better understanding of the status of MIS in ACP countries - this type of review has not been undertaken since 1996
- recommendations of best practices in costs and types of services that have the most effective ways of reaching target users, particularly smallholder farmers
- policy recommendations on public goods or private-sector financial arrangements to support long-term support in these sectors.

Marketing capacity tool

As the marketing support services within ACP countries are highly diverse, it is currently difficult to identify which types of marketing support services would best suit any one country. To address this diversity, CTA should develop a rapid online marketing profiling instrument, using instruments such as 'survey monkey', so that ACP economic research groups, policy-

makers and practitioners can use these tools to evaluate their country's position in terms of the status of its marketing interventions, institutions and investments. The assessment tool would be used to check market capacity. This information can then be used as the basis of developing plans for investment and or re-engineering options to improve the marketing efficiency and performance of key sectors, within the local context.

Outcomes of this research

- Development of an online analytical tool, that would profile the marketing status and capability of a country based on the investments and effectiveness of existing services and institutions. This profiling tool would provide a low-cost mechanism for CTA to work with ACP counterparts in evaluating national and regional market needs and opportunities.
- Areas of investigation would include aspects such as MIS capacity and competence, farmers' organisations, media coverage (radio, TV, newspapers), ICT access (Internet, mobile phone), traders' organisations, financial linkage to key agricultural sectors, storage capacity, (warehouse, cold chain), research linkage to PS, collateral trading status (WHR, exchange), legal status.

Marketing evaluation and strategy development

Based on the results of the marketing capacity analysis, CTA would be in a position to work with ACP partners and their service providers in developing support packages and or strategies for marketing development. CTA could also use this tool to evaluate whether new interventions being advocated by CTA, such as mobile trading and mobile MIS, would be an appropriate investment in a particular country.

Outcomes of this research

- Application of market capacity instrument to identify key factors related to the marketing status and capability of a country, based on the investments and effectiveness of existing services and institutions. At present, CTA is only able to commission individual support measures for ACP countries on a demand basis.
- This profiling tool would provide a low-cost mechanism for CTA to work with ACP counterparts in evaluating services across the ACP region, which would provide a prescribed scheme on which to base new interventions, and also decisions as to where to make the most effective investments relative to poverty/populations/marketing capacity indicators.

Marketing support portal

To provide an interactive information portal for a community of practice to support methods, tools and application to strengthen marketing analysis, institutional development and linkage of smallholder producers to markets. The information on the marketing portal should be directly linked with specific iterative 'learning alliance' approaches to build a cadre of marketing trade and marketing specialists that can build the capacity of private- and public-sector market institutions.

Outcomes of this R&D intervention

- CTA would act as a lead organisation in obtaining the latest conceptual thinking in applied trade and marketing approaches, methods, tools and applications within a high-profile

information and learning resource. CTA would, however, build this process using a consortium approach so as to bring together inputs from other leading research, development and private-sector agencies. In this way, the portal would lead to the establishment of a community of practice that would support an interactive information portal to provide guidance in marketing and agro-enterprise – agribusiness development.

- The information platform will build on existing materials, supplemented with news studies from partner organisations. Based on this marketing portal, CTA will encourage partners in its extensive network to evaluate where there are strengths and where there are weakness in their marketing systems and, through a consultative process, provide advice on strategies and sequenced areas of intervention to improve market efficiencies that support the needs of smallholder farmers. This portal would be used to support the marketing evaluation and strategy development tools.

Integrating trade and marketing support

Since 2001, CTA has provided, through its Agritrade web portal, policy support information to ACP trade negotiators and decision-makers on the key agricultural trade issues (WTO, EPAs, CAP reform, market access, etc.). CTA should explore options to link this trade-based information with associated activities that support market-based interventions, such as MIS and marketing exchange institutions. This integration of information would offer the opportunity for greater dialogue and knowledge-sharing between people involved in policy development and decision-making with actors involved in developing ACP business opportunities within specific sectors.

Outcomes of this R&D intervention

- Rather than building isolated areas of information that support specific trade- or market-based actors, greater linkage of trade- and market-based research and policy-type information systems will provide a new type of knowledge-management system that would further assist in bringing together both thinking and activities of people involved in diverse yet related areas of market and trade support and development.

Linking farmers to formal market institutions

To evaluate the opportunities and catalyse the process of enabling smallholder farmers to manage their risk through engaging in more formalised markets. There is little doubt regarding the many advantages of working towards more formalised markets in ACP country markets, in terms of increasing food safety, better management of risk, more transparent transactions, opportunities to add value to produce and generally strengthening good business practices. However, all these actions also involve added cost and greater business responsibility. Many observers consider that these projects will fail due to poor design, overly ambitious time frames and lack of regard of the conditions required for these systems to work. There are serious questions about the equity of benefits from interventions and how smallholder farmers, the vast majority of stakeholders in the agricultural sector of ACP countries, will benefit. More information is required to ensure that infrastructure, information and quality control equipment is available in local areas so that well organised farmer associations outside the capital city areas can also benefit from the process.

Outcomes of this research

- This research will place emphasis on evaluating the equity of benefits that accrue in the transition from informal to more formalised markets, with particular emphasis on the implications for smallholders and the supply chains in which they are involved.
- The study will evaluate gains by smallholders as opposed to larger traders and farmers who are most likely to benefit from a process of market reform. The study will focus on specific countries, and pay attention to migration flows and alternative diversification options with shifts in market forces.

Specific farmers' organisation studies

At the organisational level, there were repeated references for smallholder farmers to be more organised, if they are to be able to take advantage of new marketing opportunities. While this may be considered a simple measure, organising farmers in the post-structural period has often been poorly designed and implemented, and in many ACP countries farmers are now less organised for market supply than they were 30 years ago. Studies could be undertaken to evaluate where farmers are well organised and where they are less efficient, and the key factors and methods that influence best practice in the establishment of primary and secondary order farmers' organisations.

Outcomes of this research and development

- Best practice guides in farmer group development and linkage of these groups to secondary associations.
- Specific types of approach should be developed that suit farmers with high and low market access and those targeting high- and low-value markets.

Specific ICT studies

Mobile phone analysis, to evaluate where and how this technology could be developed in specific countries to improve marketing opportunities for poorer smallholder farmers as well as increasing marketing efficiency within and between ACP countries.

Outcomes of this research

- Recommendations and new innovations for use of ICT mobile technology linkages to support areas of market information, trading and financial links. The integration of financial and non-financial services through mobile technology offers exciting new opportunities to support the many millions of atomised farmers in ACP countries.
- New interventions in this area will provide CTA and its partners from the public and private sectors with an opportunity to design, test and privatise new services to improve marketing performance for smallholder farmers.

Programme

Programme

Expert Consultation on Market Information Systems and
Agricultural Commodity Exchanges:
Strengthening Market Signals and Institutions
28–30 November 2005
Dorint Novotel Amsterdam, The Netherlands

Day 1
Monday 28 November

- 7:30–9:00 Registration of participants
- 9:00–10:00 Session 1 Opening and setting the scene**
- 9:00–9:20 Welcome and introductions
Dr Hansjörg Neun, CTA Director
- 9:20–9:40 Testimony of CTA's early support for MIS development
Dr Ibrahim Khadar, CTA
- 9:40–10:00 Expectations and objectives of the meeting
Vincent Fautrel, CTA
- 10:00–10:30 Coffee break
- 10:30–11:40 Session 2 Setting the scene**
Chair: Dr Niek Koning, Wageningen University
- 10:30–11:10 The new trade environment and the plight of smallholder farmers
Mr Peter Robbins, Director, CMIS, UK
- 11:10–11:40 Food marketing systems, market institutions and co-ordination roles
Dr Aad van Tilburg, Wageningen University, The Netherlands
- 11:40–12:00 Review of the electronic discussion
Dr Shaun Ferris, CIAT, Uganda
- 12:00–13:00 Discussions
- 13:00–14:30 Lunch
- 14:30–16:10 Session 3 Marketing needs from the government, trade and farmer perspectives**
Chair: Baba Dioum, CMA/AOC, Senegal
- 14:30–14:50 Policy planning and outcomes in market institutions
Willie Odwongo and Martin Fowler, Ministry of Agriculture, Uganda

14:50–15:10 Traders' perspective on public sector marketing institutions: benefits and needs
Sophie Walker, Kenagri, Kenya

Farmer organizations' perspectives on market information and new innovations in auctions, warehouses and exchanges:

15:10–15:30 *Ousseini Ouedraogo, ROPPA, West Africa*

15:30–15:50 *Heishan Peiris, NASCOMEX / NASFAM, Malawi*

15:50–16:10 *Brook Johnson, CLUSA, Senegal*

16:10–16:30 Coffee break

16:30–17:30 Discussion

Day 2 Tuesday 29 November

8:00–09:50 Session 4 Innovations in market information services

Chair: Dr Arlington Chesney, IICA, Costa Rica

8:00–8:10 Introduction
Shaun Ferris, CIAT, Uganda

Case studies

8:10–8:30 National MIS: Experience in the Pacific
Taimalietane Matatumua, Ministry of Agriculture & Fisheries, Samoa

8:30–09:00 Regional MIS: Experience in West Africa
Gaston Dossouhoui, RESIMAO, Bénin and Marc Bernard, ZADI, Germany

09:00–9:30 MISTOWA: using ICTs to offer MIS that can promote the trade of agricultural products in West Africa
Patrice Annequin, IFDC/MISTOWA, Ghana & Mark Davies, TRADENET/Busylab, Ghana

09:30–09:50 Increasing the incomes and life quality of farmers in Senegal through a multimedia mobile phone MIS
Daniel Annerose, Manobi, Senegal

09:50–10:20 Discussion

10:20–10:40 Coffee break

10:40–11:40 Session 5 Market Intelligence Services

Chair: Professor Michael Weber, Michigan State University, USA

10:40–11:00 Caribbean Agribusiness Marketing Intelligence and Development Network
Mr Vassell Stewart/Dr Ardon Iton, CAMID/CARDI, Trinidad & Tobago

11:00–11:20 Regional Agricultural Trade Intelligence Network – RATIN
Stephen Njukia, RATIN, Kenya

11:20–11:40	InfoComm <i>Olivier Matringe, UNCTAD, Geneva</i>
11:40–12:00	Discussion
12:00–13:00	Discussion in three working groups
13:00–14:30	Lunch
14:30–15:30	Plenary feedback
15:30–16:30	Session 6 Market instruments to strengthen the demand signal <i>Chair: Dr. Adrian Mukhebi, KACE, Kenya</i>
15:30–15:50	Financial framework <i>Jennifer Heney, FAO, Italy</i>
15:50–16:10	Bankers' perspectives <i>S. M. Sheokand, NABAD, India</i>
16:10–16:30	Legal framework <i>J. Cockeran, JSE, South Africa</i>
16:30–16:50	Coffee Break
16:50–17:30	Discussion

Day 3 Wednesday 30 November

7:30–8:45	Visit to the flower auction in Aalsmeer (departure from Novotel at 6:45)
09:00–11:00	Session 7 Auctions, warehouse receipts and agricultural commodity exchanges <i>Chair: Peter Robbins, CMIS, UK</i>
09:00–09:10	Introduction <i>Peter Robbins</i>
Case studies	
09:10–09:40	Cereals Auctions <i>Philippe Ki, Afrique Verte, Burkina Faso</i>
	Livestock managed markets <i>Djegga Demmon, UDOPER, Bénin</i>
09:40–10:00	Warehouse receipts <i>Jonathan Coulter, NRI, UK</i>
10:00–11:00	Commodity exchanges: <i>KACE: Dr Adrian Mukhebi, Kenya</i> <i>ACE: Ian Goggin, Malawi</i> <i>SAFEX: Rod Gravelet-Blondin, South Africa</i>

11:00–11:15	Coffee break
11:15–12:15	Discussion in three working groups
12:15–13:00	Plenary feedback
13:00–14:30	Lunch
14:30–16:00	Session 8 Synthesis of the meeting – recommendations from the workshop
14:30–15:30	Working groups to look at specific questions
	Report back to plenary (3 x 10 minutes)
15:30–16:00	Main questions and recommendations
16:00–16:30	Coffee
16:30–16:45	Closing speech <i>Dr Hansjörg Neun, CTA Director</i>

List of participants

List of Participants

Patrice Annequin

MIS Unit Manager, Deputy Chief of Party
IFDC/MISTOWA
PO Box 1630
Accra
Ghana
Tel: +233 (0) 244 067 658
Fax: +233 (0) 21 780 829
E-mail: patriceannequin@gmail.com

Daniel Annerose

Directeur
MANOBI
Amitié II, Villa 4231
Technopôle de Dakar
BP 25026
Dakar Fann
Senegal
Tel: +221 869 20 50
Fax: +221 869 20 62
E-mail: daniel.annerose@manobi.net

Marc Atouga

Expert analyste des politiques agricoles
Hub rural
Plateforme s/c UNOPS Point E, Rue G x 4
BP 15 702 CP 12524
Dakar-Fann
Senegal
Tel: +221 869 39 70 / 538 02 07
Fax: +221 869 38 15
E-mail: IbrahimAssaneM@unops.org
lapodiniMA@unops.org
lapo.atouga@yahoo.fr

Limane Barage

Chargé de Programme Principal
Coordination de bases de données
sectorielles
CEDEAO / ECOWAS Executive Secretariat
No 60, Yakubu Gowon Crescent, Asokoro
PMB 401, Abuja
Nigeria
Tel: +234 8044110400
Fax: +234 314 50 14 (234)93147646
E-mail: blimane@ecowas.int
lbarage@yahoo.com

Sidiki Camara

Vice Président
CNOP
BP 421
Conakry
Guinée
Tel: +224 45 53 70
Fax: +224 57 16 74
E-mail: cnopguinee@yahoo.fr

Vinay Chand

Consultant, UK
Fax: +44 20 7431 5715
E-mail: vinaychand@msn.com

Arlington Chesney

Director Regional operations (Caribbean)
IICA
Apartado Postal 55-2200 Coronado
San José
Costa Rica
Tel: +506 216 0222
Fax: +506 216 0233
E-mail: arlington.chesney@iica.int

Louis Cockeran

Legal officer
JSE Limited
Private Bag X 991174
Sandton 2146
South Africa
Tel: +27 11 520 7000
E-mail: louisc@jse.co.za

Jonathan Coulter

Researcher
NRI
Central Avenue, Chatham Maritime
Chatham ME4 4TB
UK
Tel: +44 1634 883070
Fax: +44 1634 883706
E-mail: J.P.Coulter@gre.ac.uk

Joost Dam

ITC expert
Agriterra/VI@frica
Planciusstraat 25°
1013 MD Amsterdam
The Netherlands
Tel: +31 20 7073377
Fax: +31 207073380
E-mail: j.j.dam@viafrica.org

Mark Davies

Director
Busylab
PMB CT 90 Catonments
42 Ring Road
Accra
Ghana
Tel: +233 244 366969
E-mail: mark@busylab.com

Patrick Delmas

Directeur
Inter-Réseaux
32 rue Le Peletier
F-75009 Paris
France
Tel: +33 1 42 46 57 13
Fax: +33 1 42 46 54 24
E-mail: patrick.delmas@inter-reseaux.org

Djegga Demmon

Secretary general
UDOPER
BP 15
Gogounou - Parakou
Bénin
Tel: +229 61 20 49 / 84 56 69
E-mail: ppab.parakou@yahoo.fr

Baba Dioum

Coordinnateur General
CMAO/AOC
Avenue Bourguiba
BP 15799
Dakar-Fann
Senegal
Tel: +221 869 11 90
Fax: +221 869 11 93
E-mail: cmaoc@cmaoc.org

Gaston Dossouhoui

Directeur Général
ONASA
06 BP 2544
Cotonou
Bénin
Tel: +229 95.03 6098/21 33 15 02
Fax: +229. 21 33 02 93
E-mail: cossigaston@yahoo.fr
onazamdr@intnet.bj

John Dziwornu

Vice Chairman
GNAFF
PO Box MB 37
Accra
Ghana
Tel: +233 244115537
Fax: +233 21 6652 82 233 21 68 24 29
E-mail: dzijoh@yahoo.com

Shaun Ferris

Project Director
CIAT
PO Box 6247
Kampala
Uganda
Tel: 256 77221163
Fax: 25641 567635
E-mail: s.ferris@cgiar.org

Martin Fowler

EU adviser
Ministry of Agriculture
PMB CT 90 Catonments
42 Ring Road
Entebbe
Uganda
Tel: +233 244 366969
E-mail: mfowler@utlonline.co.ug

Diana Francis

Regional Consultant, Trade and Policies
IICA
3 Herbert Street, Newton
Port of Spain
Trinidad & Tobago
Tel: +1 868 6284403/07
Fax: +1 868 6284562
E-mail: dfrancis@iicacarc.org

Prisca Wanjiru Githuka

Information and Communications Officer
KENFAP
PO Box 43148
00100 Nairobi
Kenya
Tel: +254 2 608324
Fax: +254 2 608325
E-mail: farmers@kenfap.org

Ian Goggin

Chief Executive Officer
ACE
Private Bag 402
Kanengo, Lilongwe
Malawi
Tel: 265 1 710204/304
E-mail: icgoggin@gmail.com

Rod Gravelet-Blondin

Manager
SAFEX
Private Bag X991174
Sandton 2146
Republic of South Africa
Tel: +27 11 520 7000
Fax: +27 11 520 7458
E-mail: RodGB@jse.co.za

Jennifer Heney

Rural finance Officer
FAO
Viale delle Terme di Caracalla
00100 Rome
Italy
Tel: +39 06 5705 3463
E-mail: Jennifer.Heney@fao.org

Liselotte Isaksson

Rural development expert
EU DG DEV
B-1049 Brussels
Belgium
Tel: +32 2 299 11 11
E-mail: Liselotte.Isaksson@cec.eu.int

Ardon Iton

Head, Marketing Dept
CARDI
St Augustine
Trinidad & Tobago
Tel: +1 868 645 1205
E-mail: marketing@cardi.org

Brook Johnson

Economics Benefits Officer
CLUSA/Programme Wula Nafaa
BP 45
Tambacounda
Senegal
Tel: +221 9398010
Fax: +221 9398025
E-mail: bjohnson@sentoo.sn

Francis Keita

Coordinateur
OMA/RESIMAO
BP E5589
Bamako
Mali
Tel: +223 221 40 73 / 676 83 47
Fax: +223 221 17 11
E-mail: kfrancis@datatech.net.ml

Philippe Ki

Directeur
Afrique verte
01 BP 6129
Ouagadougou 01
Burkina Faso
Tel: +226 50 34 11 39 / 766 14009
Fax: +226 50 34 36 24
E-mail: afrique.verte@liptinfor.bf

Henning Knipschild

Project Officer
ZADI
Vilichgasse 17
53177 Bonn
Germany
Tel: +49 228 9548364
Fax: +49 228 9548111
E-mail: knipschild@zadi.de

Attoh Sylvain Kouao

Responsable SIM
ANOPACI
Cocody Résidence Montbenon 20
BP 937 Abidjan 20
Côte d'Ivoire
Tel: +225 07 82 92 98
Fax: +225 20 32 14 92
E-mail: kouattoh@yahoo.fr

Anne Lothoré

Inter-Réseaux
32 rue Le Peletier
F-75009 Paris
France
Tel: +33 1 42 46 57 13
Fax: +33 1 42 46 54 24
E-mail: anne.lothore@inter-reseaux.org

Tai Matatumua

Senior Marketing Information Officer
Ministry of Agriculture and Fisheries, Crops
Division – Atele
PO Box 1874
Apia
Samoa
Tel: +685 23341
Fax: +685 24576
E-mail: t.matatumua@yahoo.com

Olivier Matringe

Coordonnateur du programme INFOCOMM
CNUCED/INFOCOMM
8-14 avenue de la Paix
1211 Geneve 10
Suisse
Tel: +41 22 917 57 74
Fax: +41 22 917 02 47 / 917 05 09
E-mail: Olivier.Matringe@unctad.org

Adrian Mukhebi

Executive Director
KACE
PO Box 59142
00200 Nairobi
Kenya
Tel: +254 20444 1829/30/4448485
Fax: +254 20444 1831/4448486
E-mail: amukhebi@kacekenya.com

Stephen Njuria

Senior expert
RATIN/RATES
PO Box 1325
Nairobi 00606
Kenya
Tel: +254 20 421200
Fax: +254 20 4212271
E-mail: snjuria@ratescenter.org

François Nsengiyumva

Secrétaire Exécutif
ROPARWA
BP 6699
Kigali
Rwanda
E-mail: roparwa@rwanda1.com

Willie Odwongo

Adviser
Ministry of Agriculture
PO Box 102
Entebbe
Uganda
Tel: +256 41321413 / 256 77461163 /
256 41 252 263
Fax: +256 41 321335
E-mail: wodwongo@pma.go.ug
wodwongo@yahoo.com

Eric Omuru

Senior Economist
PNG Cocoa, Coconut Institute
Kokopo, East New Britain Province
Papua New Guinea
Tel: +675 983131/9839115
Fax: +675 3217813
E-mail: economics@ccipng.com.pg

Ousseini Ouedraogo

Chargé de Communication
ROPPA
09 BP 884
Ouagadougou 09
Burkina Faso
Tel: +226 50 36 08 25
Fax: +226 50 36 08 25
E-mail: mohamadou.magha@roppa-ao.org

Heshan Peiris

Commercial Director
NASFAM/NASCOMEX
NASFAM House City Center
PO Box 30716, Lilongwe 3
Malawi
E-mail: HPeiris@nasfam.org

Nigel Poole

Senior Lecturer, Centre for Food Chain
Research
Centre for Environmental Policy, Imperial
College London – Wye Campus
Wye, Ashford, Kent TN25 5AH
UK
Tel: +44 207 594 2863
Fax: +44 207 594 2838
E-mail: n.poole@imperial.ac.uk

David Queen

Consultant
London, UK
Tel: +44 207 485 8397
E-mail: davidqueen@btinternet.com

Peter Robbins

Director
CMIS
62 Woodsome Road
London NW5 1RZ
UK
Tel: +44 (0)207 482 6166
Fax: +44 (0)207 482 6166
E-mail: commodityinformation@gmail.com

Suraj Mal Sheokand

CEO
NABARD Consultancy Services
Mumbai
India
E-mail: nabcons@vsnl.net

Francois Stepman

IICD
Raamweg 5
2596 HL The Hague
PO Box 11586
2502 AN The Hague
The Netherlands
Tel: +31 70 311 73 11
Fax: +31 70 311 73 22
E-mail: fstepman@iicd.org

Vassell Stewart

Co-ordinator
CAMID Network
CARDI, St Augustine
Trinidad & Tobago
Tel: 868 645 1205
E-mail: camid@cardi.org

Issa Tankari

Secrétaire Exécutif
Observatoire régional oignon
BP 12.131
Niamey
Niger
Tel: +227 73.62.56
Fax: +227 73.86.63
E-mail: papeap@intnet.ne

Aad van Tilburg

Marketing & Consumer Behaviour Group
Wageningen University
Hollandseweg 1
6707 KN Wageningen
The Netherlands
Tel: +31 317 48 372/3385
Fax: +31 31 484361
E-mail: Aad.vanTilburg@wur.nl

Sophie Walker

Trader
Kenagri, Kenya
E-mail: sophie@kenagri.com

Michael T Weber

Professor and Co-Director
Food Security III Cooperative Agreement,
Dept. Ag. Economics, Michigan State
University
Room 216 Ag. Hall
Michigan State University
East Lansing, MI 48824-1039
USA
Tel: +1 517 353 8639
Fax: +1 517 432 1800
E-mail: webermi@pilot.msu.edu

Abdou Yahouza

Coordinateur du programme Pastoral
Régional
AREN (éleveurs – SIM bétail)
Boite Postale 12758
Niamey
Niger
Tel: +227 73 66 22 / 24 17 13
Fax: +227 73 66 21
E-mail: abdouaren@yahoo.fr

Interpreters

Tilly Gaillard

E-mail: tillygaillard@wanadoo.fr

Nadia Sadoughi

E-mail: Nadialex@noos.fr

CTA staff

Hansjörg Neun, Director, CTA

Planning & Corporate Services:

Ibrahim Khadar, Manager
Vincent Fautrel
Cathelijne van Melle
Debbie Kleinbussink

**Communication Channels and Services
Department:**

Oumy Ndiaye, Manager
Koda Traoré
John Woodend
Lucie Scheepers

ICM Skills and Systems Department:

Thierry Doudet, Manager
Ibrahim Tiemogo

**Information Products and Services
Department:**

Sarah Bel
Vivienne Oguya

Acronyms and abbreviations

ACP	African, Caribbean and Pacific
ACE	agricultural commodity exchange
AICI	Agricultural Insurance Company of India Ltd
AMD	Agricultural Markets Division (of SAFEX)
APD	Agricultural Products Division (of the JSE), South Africa
CECAM	Caisses d'Épargne et de Crédit Mutuels, Madagascar
CABA	Caribbean Agribusiness Association
CAMID	Caribbean Agribusiness Marketing Intelligence and Development
CARDI	Caribbean Agricultural Research and Development Institute
CBS	Central Bank of Samoa
CMA	collateral management agreement
CEDEAO	Communauté Economique des Etats de l'Afrique de l'Ouest
CLUSA	Cooperative League of the United States of America
CRDI	<i>see</i> IDRC
EAC	East African Community
ECOWAS	Economic Community of West African States
ELISA	enzyme-linked immunosorbent assay
FMCA	Financial Markets Control Act, South Africa
FAO	Food and Agriculture Organization of the UN
HPLC	high-performance liquid chromatography
ITC	India Tobacco Company
ICT	information and communication technologies
IDRC	International Development Research Centre, Canada (Centre de Recherches pour le Développement International)
IVR	interactive voice response
IFDC	International Center for Soil Fertility and Agricultural Development
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IFPRI	International Food Policy Research Institute
JSE	Johannesburg Stock Exchange
KACE	Kenya Agricultural Commodity Exchange Ltd
KBC	Kenya Broadcasting Corporation
MIP	market information point
MIS	market information system
MISTOWA	Market Information Systems and Traders' Organizations of West Africa (USAID project)
MAPS	Marketing and Agro-Processing Strategy, Uganda
MFI	micro-finance institution
MCX	Multi-Commodity Exchange, India
NASCOMEX	NASFAM Commodity Exchange (Malawi)
NABARD	National Bank for Agriculture and Rural Development, India
NCDEX	National Commodity and Derivative Exchange, India
NMCE	National Multi-Commodity Exchange, India
NASFAM	National Smallholder Farmers' Association of Malawi
NGO	non-government organisation
ONASA	Office National d'Appui à la Sécurité Alimentaire, Benin
OECD	Organisation for Economic Co-operation and Development
PMA	Plan for the Modernisation of Agriculture, Uganda

PPCD	Policy Planning and Communication Division of the Ministry of Agriculture, Samoa
RATIN	Regional Agricultural Trade Intelligence Network
RIMS	Regional Integrated Marketing Development Strategy (of CAMID)
RESIMAO	Réseau des Systèmes d'Information des Marchés en Afrique de l'Ouest (West African Market Information Systems Network)
RBI	Reserve Bank of India
SMS	short message service
SADC	Southern African Development Community
SDRDC	Southern Diaspora Research and Development Centre
CATIE	Tropical Agricultural Research and Higher Education Center, Costa Rica
UDOPER	Union Départementale des Organisations Professionnelles d'Éleveurs de Ruminants (Departmental Union of Professional Organisations of Livestock Farmers)
WRS	warehouse receipt system
WAP	wireless application protocol
WARP	West African Regional Programme (of USAID)
WTO	World Trade Organization
ZACA	Zambian Agricultural Commodities Association
ZADI	Zentralstelle für Agrardokumentation und –information (Central office for Agrarian Documentation and Information)
ZIMACE	Zimbabwe Agricultural Commodity Exchange