

Community Access to Marketing Opportunities¹

U Kleih², C Jumbe³, A Kergna⁴, W Odwongo⁵

Paper presented at Workshop at Wye College, University of London,
on
Improving Smallholder Market Access in Remote Areas
8 & 9 July 1999

¹ This publication is an output from a research project funded by the United Kingdom Department for International Development (DFID) for the benefit of developing countries. The views expressed here are not necessarily those of DFID. R7148 Crop Post-harvest Research Programme.

² Natural Resources Institute, University of Greenwich, Chatham Maritime, UK

³ Agricultural Policy Research Unit, Bunda College of Agriculture, Malawi

⁴ Institut d'Economie Rurale, Bamako, Mali

⁵ Agricultural Policy Secretariat, Ministry of Finance, Planning and Economic Development, Kampala, Uganda.

Table of Contents

ACKNOWLEDGEMENTS	2
SUMMARY	2
INTRODUCTION	2
APPROACH	3
Definitions	3
A Multi-Sector Approach	3
FIELD WORK	7
Activities	7
Survey Results	7
ENABLING ENVIRONMENT	10
Political Situation	10
Decentralisation	10
Economic Policy	13
Agricultural Policy	14
Social environment	15
Legal and regulatory framework	15
INFRASTRUCTURE	16
Road Network	16
Means of Transportation	20
Market Infrastructure	24
Storage	24
Processing	25
INFORMATION	26
Facts about information	26
Types of market information required	27
Means of Communication	28
Rural Radio	28
Other means of communication	31
Market Information Systems and the Way forward	32
Mali's experience	32
Ideas on a decentralised Market Information System	34
FACILITATING FUNCTIONS	35
Community Organisation	35
Research and Extension	38
Credit	39
Capacity Building	39
BIBLIOGRAPHY	40

ACKNOWLEDGEMENTS

The authors are grateful to the numerous colleagues of their respective institutes who have contributed to the success of this research. Last but not least, the team would like to thank the members of the private, public and NGO sectors, without whose frank and willing exchange of ideas the study would not have been possible.

SUMMARY

The findings of this presentation are based on results of a research project funded by DFID's Crops Post-Harvest Research Programme between April 1998 and March 1999, with fieldwork taking place in Malawi, Mali, and Uganda. The research concluded that integrated approaches are required to improve community access to marketing opportunities in remote areas of Sub-Saharan Africa. At the same time, identification and prioritisation of key areas is one of the main challenges of holistic approaches.

For a start, marketing opportunities imply that there is a demand on domestic, regional, or international markets. Provided demand exists, farming communities have to develop a reputation for good quality surplus production, which will attract traders. Due to the liberalisation of agricultural marketing systems, farmers are forced to adopt a more commercial approach to their production. This requires extension services which are in a position to provide relevant messages.

Aside from an enabling environment and facilitating functions such as credit, maintenance of road networks, means of transportation, decentralised market information systems, and community organisation have been identified as key to improving community access to marketing opportunities. Market information systems and extension services should make more use of local FM radio stations. Decentralisation offers a chance for remote areas, however planning and implementation capacity, funding, and accountability need to be improved at local government level.

INTRODUCTION

The findings presented in this paper are the result of a research project which was funded between April 1998 and March 1999 by DFID's Crop Post-Harvest Research Programme (part of RNRKS⁶). It was managed by the Natural Resources Institute, with collaborators in Malawi (Agricultural Policy Research Unit, Bunda College of Agriculture), Mali (Institut d'Economie Rurale), and Uganda (Agricultural Policy Secretariat, Ministry of Finance, Planning and Economic Development).

The need for a better understanding of community access to market opportunities in the countries concerned was expressed at various levels. Following the liberalisation of agricultural markets in Malawi, it was observed that farmers in rural areas where the Agricultural Development and marketing Corporation (ADMARC) withdrew its services faced difficulties in purchasing inputs and food, and selling produce

⁶ Renewable Natural Resources Knowledge Strategy

(Marsland and Golob, 1996). Both Mali and Uganda have been able to increase their agricultural production throughout the 1990s but in particular in remote areas farming communities lack access to marketing opportunities.

The project looked at market access related issues primarily from a policy and institutional perspective.

APPROACH

Definitions

Before embarking on a discussion of approach and survey design, it was deemed necessary to define the following key concepts used in the research:

Market Access: Farmers have sufficient information and the physical, financial and social means to purchase inputs or food, and sell agricultural produce on favourable terms.

Consequences of lack of market access: Low volumes of buying and selling transactions and on unfavourable terms for the farmers, leading in turn to:

- Low productivity, and production of cash and food crops,
- Low income,
- Poverty, also in terms of food insecurity and access to basic services such as health and education.

Remote areas: In the context of this research, these are areas where,

(a) transport costs per unit of produce are high, which is the result of several constraints, including:

- Inaccessibility, as a function of distance, road conditions, terrain, and climatic conditions,
- Inappropriate means of transportation, and
- Low volumes of produce available for transportation, preventing economies of scale.

(b) producers lack information not only on markets but also other aspects of their business as a result of:

- Lack of communication infrastructure,
- Insufficient movement of people, and
- Lack of information sources.

A Multi-Sector Approach

The above definition of market access implies a multi-sector approach to improve the terms on which farmers participate in the marketing system. Given that single

interventions alone are unlikely to succeed, it is felt that a holistic view of the subject is required.

It goes without saying that the most basic of conditions for market access is the existence of market opportunities for produce potentially coming from remote areas. In this study it is assumed that demand exists either on domestic, regional, or international markets. Provided there is a demand there are three main options by which the competitiveness of agricultural suppliers in remote and other areas can be improved,

- (a) Reduction of marketing costs,
- (b) Productivity increases leading to lower production costs per unit of output,
- (c) In the case of domestic markets, protection through tariffs.

In the context of this study, the emphasis is on (a). The importance of (b) is recognised and will also be touched upon. In the light of international efforts to liberalise agricultural markets, the scope for (c) has been deemed to be very limited and, hence, not been further investigated.

Efforts to reduce marketing margins involve looking at the various elements of marketing costs. As already indicated, it is in particular high transport costs that make a community "remote". Availability and prices of inputs as well as output prices have a bearing on the farming system. The scissors effect of high input costs and low output prices results in decreased financial incentives for agricultural producers, which is likely to lead to more extensive production systems than in areas with better access (Risopoulos et al, no date). The consequence is lower production of marketable produce (i.e. cash and food crops), and even subsistence production if transport costs are prohibitively high (i.e. leading to negative gross margins).

Transaction costs include costs related to the search for trading partners, negotiating, opportunistic risk, and contract enforcement (Galtier and Egg, 1998). These costs are generally difficult to measure and, due to their 'invisibility', may in certain cases be confounded with traders' profit. Although, in one way or another, they form part of most trading deals, transaction costs are likely to be higher in remote areas. Amongst other things, this is due to a lack of information by which communities in remote areas are characterised. Information is an integral part of all decision-making processes, and as such also essential for farmers and traders operating in isolated areas. There is a link between transport and information since increased movement of people tends to improve the flow of information. This can be particularly important for isolated areas characterised by a lack of communication infrastructure such as telephone lines. Storage and processing can improve farmers' options in remote areas. For example intra-seasonal storage may allow a farmer to sell a crop which would be non-tradeable during parts of the year when roads are impassable. Similarly, processing can render a bulky crop into a low volume-high value commodity, as a result of which it can become tradeable. Capital cost forms an integral part of all marketing transactions. Farmers require access to credit to purchase capital equipment such as means of transportation, and inputs for agricultural production. However, due to numerous causes, remote areas tend to be characterised by a lack of credit facilities.

Social issues are important in the context of market access. Given the role of women in marketing of agricultural produce in many parts of Africa, suggestions to improve access ought to take this fact into account. Although women do not always play a major role in the selling of produce (i.e. in particular of cash crops), they usually carry the main burden (i.e. head-loading) when no improved means of transportation are available. Equity plays a role insofar as not all community members may benefit to the same degree from market access. Those who benefit more are likely to have priorities different from those expressed by the poorer members of the community.

Marketing and market access cannot be dealt with as a stand-alone issue. It has to be seen as an integral part of the commodity system. On the one hand producers ought to have an idea where they will sell their produce prior to starting production, on the other hand adequate supply in terms of quantity and quality is another prerequisite for an efficient marketing system. Improving linkages between the different players of a marketing system, namely traders and farmers, is important in the context of market access. However, given that other DFID funded research projects have already looked into this aspect in detail in the context of interlocking transactions and input credit schemes (i.e. Poulton et al, 1997; Gordon and Goodland, 1999), this will only be touched upon indirectly. At the same time it is expected that improved transport and better flow of information will also improve linkages.

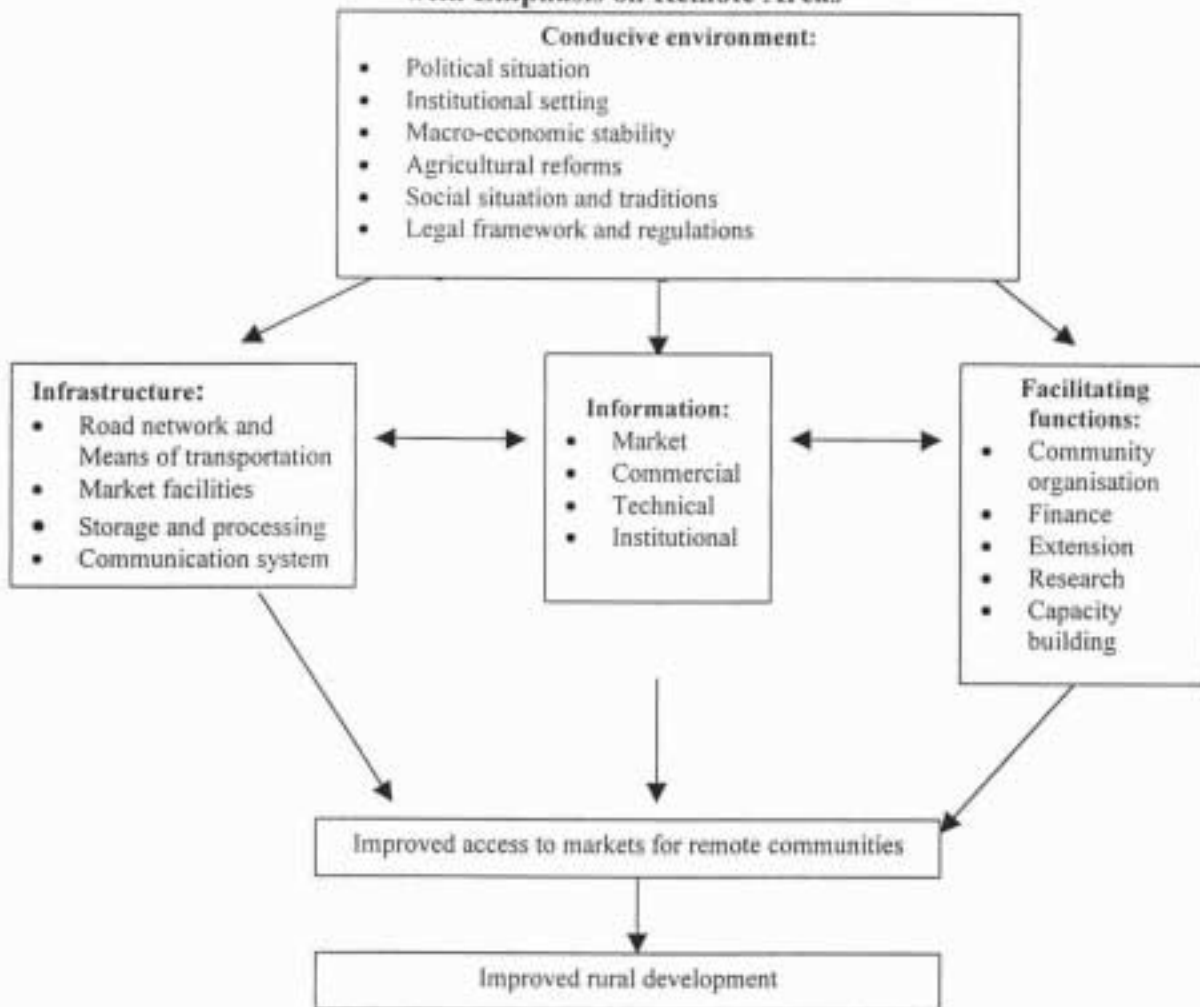
Given the complexity of the subject, an integrated approach seems appropriate to examine the issues related to market access for rural communities. In the light of decentralisation policies, which have become a main feature of many countries in Sub-Saharan Africa, an integrated, multi-disciplinary approach appears justified. This bears similarities with the Sustainable Rural Livelihoods approach which is also based on a holistic framework stressing that livelihoods primarily depend on five types of asset, namely: human capital, natural capital, physical capital, social capital, and financial capital (Carney, 1998).

At the same time, it is important to avoid the shortcomings of the Integrated Rural Development (IRD) approach, which was the mainstay of rural development for about two decades up until the early 1980s. These shortcomings included:

- Absence of an enabling environment (i.e. political, economic, and institutional).
- Top-down approaches without the participation of the concerned population groups.
- Lack of institution and capacity building on a sustainable basis
- Dissemination of inappropriate technologies

If an integrated approach is to succeed then these constraints need to be avoided. In particular institutional solutions need to be sought. Decentralisation efforts are key in this context. Figure 1 illustrates the relationships of the issues involved in an integrated approach examining community access to marketing opportunities. Aside from an enabling environment, the study will concentrate on road infrastructure, means of transportation, information, and the role of community associations. The other issues will be dealt with but not in detail.

Figure 1: Community Access to Marketing Opportunities, with Emphasis on Remote Areas



FIELD WORK

Activities

During the first phase of the project a literature search has been undertaken, which was followed by the development of a conceptual framework. In both Malawi and Uganda, the total amount of survey time was of the order of two months spread between October 1998 and March 1999. In both countries, the fieldwork consisted of the following two main elements:

- In the capital (and Blantyre in the case of Malawi), discussions with key informants of Ministries, donor institutions, NGOs and private sector companies.
- Five one-week visits to selected Districts with remote farming communities facing problems related to market access. The main elements of these visits included workshops involving various stakeholders of the private and public sector with an interest in market access related issues. In addition, discussions were held with key informants and Rapid Rural Appraisal type exercises were carried out in at least one village per District.

In January 1999, a two-week visit was undertaken to Mali in order to complement the picture with lessons from West Africa.

Survey Results

The following four main constraints have been identified in Uganda and Malawi, during the course of one-day District level workshops focussing on how to improve market access in remote areas:

- Poor roads,
- lack of means of transportation,
- lack of market information
- Poor market infrastructure / network.

However, at this point no attempt will be made to discuss all the constraints in detail. This will take place in detail in the following sections according to the framework presented above. Some of the points identified (i.e. in particular, low produce prices) are the result of marketing constraints and hence not dealt with separately.

It is worth noting that in addition to the "classic" marketing constraints, other constraints were also mentioned. In particular the constraint "low quality and quantity of production" has an impact on marketing opportunities for rural communities. Low volumes and poor quality of produce for sale discourage traders to travel long distances to remote areas since this is likely to increase risk, transaction costs, and transport costs per unit of produce.

Although it is acknowledged that markets ought to exist before production can start, **adequate supply (i.e. sufficient quantity and quality) is a condition for the efficient functioning of commodity chains.** This calls for specialisation of farm production rather than diversification. In particular in remote areas of Uganda, where

farmers traditionally have a high level of subsistence production of the main food crops, it appears necessary to introduce more specialised production patterns. In Malawi, there are efforts underway to diversify the farming system. However, if the produce is intended for the market, too much diversification might hamper its marketability. Given the risk inherent to smallholder agriculture, it appears important to get the balance right between specialisation and diversification.

To improve market access, the crops to be produced for sale by farmers in remote areas should have the following characteristics:

- Low volume/weight (i.e. not bulky),
- High value,
- Low perishability.

This should lead to reduced per unit transport costs, and, if storability can be increased, allow producers some flexibility in their sales transactions. Processing may be required for certain types of crops such as cassava.

Lack and/or cost of inputs, which was indicated as another constraint, directly influences levels and quality of production. For example, the lack of good quality seed was repeatedly brought up during discussions with farmers and at workshops. Other inputs which are increasingly requested by farmers include fertiliser and pesticides. It is therefore important for the Government to have a coherent policy regarding agricultural input supply.

Table 1. Results of District Level Workshops

(a) Malawi - Ranked Constraints to Marketing of Agricultural Produce

		Mzuzu	Chitipa	Ntchisi	Mangochi	Nsanje
1	Poor roads	1	1	2	1	1
2	Low produce prices	4	2	1	2	2
3	Lack of means of transportation	3	3	5	2	4
4	Information/Education	2	6	4	2	
5	Markets (infrastructure and distance)	5			6	3
6	Lack of buyers	8	4	3		
7	Credit / capital	11	5		7	
8	Lack and/or cost of inputs	8			5	
9	High transport costs					5
10	Farmer associations	5				

(b) Uganda - Ranked Constraints to Marketing of Agricultural Produce

		Kibaale	Lira	Kapchorwa	Rukungiri	Katakwi
1	Poor roads / network	1	1	2	1	6
2	Inadequate market information	2	2	1	5	4
3	Poor means of transportation	3	8	5	5	1
4	Poor market infrastructure/ Network		2	8	10	4
5	Lack and/or cost of inputs	6		3	7	14
6	Inadequate and poor storage	9	6	5	13	7
7	Low produce prices		8	4	2	11
8	Low quality and quantity of production	7		10	7	7
9	Inaccessibility of credit			16	11	2
10	Insecurity	11	2	10		

Note: Figures represent ranks of constraints identified at District level workshops. The ranks are based on scores, which were converted into proportions, for which averages were calculated for each category. Only the ten most important overall constraints are represented per country.

ENABLING ENVIRONMENT

Political Situation

Needless to say political stability is key to the development of remote areas and their successful integration into the marketing system. All three countries, Malawi, Mali, and Uganda, underwent considerable political change during the last decade.

Uganda's system of Government is based on an elected parliament, and a non-party movement, i.e. the National Resistance Movement. A referendum is planned for 2000 to decide whether the political system should be based on the movement system or a multi-partyism. Uganda's media are lively, which is a major factor contributing to the relative transparency of Government decisions. This transparency is particularly obvious in the capital Kampala, where most of the decisions are taken, and where most of the media are based. On the other hand, transparency is less visible in the more remote Districts.

There are three security problems which are of concern for Uganda. Firstly, on the domestic front there is an insurgency in the Northern parts of the country. Secondly, cattle rustling is considered a problem in the East and Northeast of the country. Thirdly, the war in the Congo is a destabilising influence in the Region.

These security issues pose a problem in one form or another, delaying the development of market access by farming communities. The more remote parts of the Districts concerned suffer most from the first two forms of insecurity. This not only contributes to delays in developing the Districts, but can also lead to destruction of infrastructure and human lives. The war in the Congo represents a drain on the country's resources, and disrupts the cross-border trade in the West and South-West of the country.

Until 1996, until a peaceful solution was found, Mali's Government was confronted with an armed rebellion in the Northern parts of the country.

Both, Mali and Malawi, saw the change from a dictatorship to a multi-party system during the early 1990s. The opening of the political system resulted in more freedom of expression and transparency.

However, at the same time it has been noted that in some cases the political transformation has led to difficulties: (a) Exacerbated by economic hardships, breakdown of law and order in some areas, potentially discouraging investment, (b) interference of party-politics in private sector business (e.g. encouragement to credit default in Malawi), and (c) although this is not exclusive to developing countries, during election time, disproportionate amounts of resources are concentrated on this political event.

Decentralisation

Aside from democratisation, decentralisation is another main feature of political change in Sub-Saharan Africa during the 1990s. Amongst the three countries, it is

Uganda, which is by far the most advanced. In fact, it is often described as a model, from which lessons can be learnt.

Decentralisation is considered as a means of increasing the effectiveness of the public sector (Goodland and Kleih, 1998). This is achieved by better information to policy makers about local problems, preferences, and opportunities. Targeting of resources requires detailed information about who and where the poor are, and what their needs are. Local government may be better placed to gather this information. Sub-levels of government are better placed to respond to the needs of local communities, so local development is enhanced and a more equitable allocation of resources among districts and groups results. In this context, it can be expected that decentralisation will be to the benefit of remote communities.

At the same time, many decentralisation reforms in sub-Saharan Africa have in effect been exercises in deconcentration, without any significant power being relinquished by the centre (Griffith et al, 1999). Local governments have not only lacked power and real decision making, they have also lacked resources, and have typically been unable to raise revenue independently from central government, which continues to hold the purse strings. Local authorities require strengthening and developing before they can fully utilise local knowledge. Local officials often lack skills in methods for increasing community participation in decision making and resource allocation. Furthermore, decentralisation can often reduce equity as local governments can easily be controlled by local elites.

It is difficult to evaluate the impact of decentralisation: problems are not due to decentralisation per se, but to more general administrative, economic and development factors (Conyers 1990).

As already indicated Uganda is considered a model for the implementation of decentralisation. The decentralisation process in Uganda started as early as 1986 when a commission of inquiry into the local Government system was set up. By September 1987, a local Authorities Committee was appointed. The process of decentralisation was officially launched in 1992, leading to the 1997 Local Government Act.

According to Musa (no date), decentralisation was well-received by the population. It is seen as vehicle for greater participation of the people at the grass-roots. One of the key challenges in this respect is how communities can influence decision making processes at Local Government (LG) level.

Although it is acknowledged that financial practice has improved at District level (Musa, no date), it still seems that a lot more needs to be done in the more remote, "new" Districts. Aside from improved accountability, the capacity of LG needs to be improved to be able to absorb funds. This requires adequate planning and implementation capacity.

It is often implied that decentralisation will lead to improved financial autonomy of LGs, however this is only partly true, since in reality the Districts still depend largely on transfers from the Centre. There is a particular shortage of funds at sub-county level. Although 65% of local revenue remains at the lower councils (i.e. graduated tax), the resulting funds are insufficient, owing to a small tax-base. There is even a

danger that this shortage of funds might lead to efforts at sub-county levels to introduce taxes that can become a constraint to agricultural marketing. For example, high taxes on vehicle ownership or movement of goods are likely to have detrimental effects on market access by farmers in remote areas. In particular the taxation of movement of goods at LG boundaries ought to be avoided since it can create significant extra marketing costs.

At present, conditional grants are still the main source of funding of LG government. Agriculture is one of the priority areas with particular emphasis on extension services at sub-county level. However in most Districts agriculture lags behind the other three priorities, i.e. roads, health, and education. Equalisation grants, the objective of which is to reduce inequalities between Districts, are to be introduced in the FY 1999/2000.

As for the transfer of funds to Districts, which are earmarked for specific activities, a lot can be learned from World Bank funded health projects in Uganda (e.g. the District Health Services Project). A significant part of their funds included capacity building, which included training of finance officers and accountants. Watertight accountability and control mechanisms had to be put in place.

The creation of certain new institutions at LG level is required by the Local Government Act, however, some of them such as the LG Public Accounts Committee and the LG Tendering Board are in some Districts either not in place or not fully operational (Musa, no date). "New" Districts and those that are located in remote areas without adequate infrastructure, are less likely to attract qualified and experienced staff. Inevitably this will have its bearings on the quality of public services. This includes services required to improve market access for farming communities in remote areas (e.g. agricultural extension, market information services, etc).

To sum up, Uganda has embraced decentralisation in a positive manner, although it must be recognised that the country is only in the early stages of implementing this policy. Decentralisation is a long-term measure and there is still a long way to go.

In both Malawi and Mali, decentralisation started at a later stage. The policy to decentralise services to new District Assemblies was adopted by the Malawian cabinet in 1998 and the Local Government Act became law on 31st December 1998. 12 "urban" assemblies (city, municipal, and town) and 26 District Assemblies are being set up. UNDP have sponsored the development of Local Government entities on a pilot scale in six Districts.

In Mali, the law on general territorial decentralisation was adopted in February 1993 resulting in the Institutional Development Programme, which started in 1996. In early 1999, the decentralisation process in Mali was primarily in its planning stages with the bulk of implementation still to be carried out.

Key challenges in the context of decentralisation include the development of:

- local capacity to plan and implement project activities,
- transparency and accountability at LG level,
- the inclusion of the grassroots in the local decision making process.

Economic Policy

Economic liberalisation and structural adjustment programmes have been key features of economic policy in most countries in sub-Saharan Africa during the 1980s and 1990s. The elements of this are well-known and include, private sector promotion, reductions of Government budget deficits, devaluation or floating of the currency, privatisation of parastatals, management of interest rates, promotion of the export sector including diversification of the export base, etc.

In both Mali and Uganda, the results of economic liberalisation are by and large considered a success, whereas the outcome has been mixed in the case of Malawi.

Despite economic growth and investment, there are some sectors in which private business is only emerging, as a consequence of which considerable amounts of capacity building are required. The agro-processing sector is one of them. For example, although it is often argued that Uganda has a comparative advantage as a supplier of raw materials on the regional and international market, it is felt that the country ought to develop its own industrial base. In the longer-term, the country is likely to be increasingly dependent on the secondary and tertiary sectors for employment generation.

In the context of market access, economic policies have a bearing on demand for agricultural produce, which in turn influences the marketing opportunities for farming communities. As a result, Government and its various agencies should stimulate domestic and external demand for fresh and processed agricultural produce. This should not be interpreted in the sense of Keynesian policies, but in the sense of guidance at the sector level and provision of favourable investment conditions (e.g. low interest rates, low inflation). As for the domestic market, demand patterns are likely to shift with increasing purchasing power and consumer education. Development of agro-industries should be promoted to increase domestic markets for agricultural produce including foodcrops such as cassava, sweet potato, plantain, grains, legumes, fruits and vegetables. In this context, decision makers ought to recognise that traditional foodcrops are also cash crops for farmers who depend on their sales for income.

At the same time, it appears that current and potential agricultural demand are not sufficiently known. Market demand studies are required to improve this understanding, based on which adequate measures can be taken. For example, in 1999, DFID are sponsoring a study on industrial cassava markets in Uganda.

Export and cross-border trade should also be promoted. The latter is likely to have a strong impact on remote Districts, which often tend to be located close to neighbouring countries. Elements that require improving in this context are:

- Bilateral trade negotiations to improve access,
- Better infrastructure links with neighbouring countries in border areas,
- Better information exchange,
- Better linkages between traders on both sides of the borders,
- Better legal protection of traders who operate in neighbouring countries.

In Mali, the overall impact of the devaluation of the Fcfa on agricultural production is estimated to be positive. Reduced food imports in the domestic and regional market have opened up new marketing opportunities for Malian producers. Although further research is required on this, it can be assumed that the increased demand has also improved the marketing opportunities of communities in remote areas.

Agricultural Policy

It is widely acknowledged that Mali's economic and agricultural reform programmes were among the most thorough and successful in Sub-Saharan Africa. At the end of the 1990s it can be said that Mali's economy is largely based on free market principles. Officially, Office des Produits Agricoles au Mali (OPAM) had a monopoly position until the early 1980s. In reality, however, it never dominated the markets. Only 15% of marketable cereals surplus went through OPAM (Coulter and Tyler, 1993, based on Humphreys, 1986) and most cereals marketing was handled by private traders. As a consequence, the private sector was more or less immediately able to take full advantage of economic reforms. Mali did not have to rebuild its private agricultural trading sector like it was/is for example the case in parts of Eastern and Southern Africa, where the para-statals enjoyed a much stronger position. In 1999, Mali's cereals trade is thriving not only by supplying the domestic market but also by exporting substantial quantities to the region (e.g. Cote d'Ivoire, etc).

The Malawian case is less positive. It was felt that the liberalisation process was rushed, making it difficult for remote communities to have access to input and output markets, thereby contributing to widespread household food insecurity. The closure of uneconomic ADMARC markets was necessitated in the context of the Structural Adjustment Programmes to make the parastatal more competitive. However, the gaps so created were never filled because private traders could not operate profitably in remote areas deemed unprofitable by ADMARC. As commercial entities they have also been concentrated in the more profitable markets. At the same time, the fact that part of ADMARC's operations are still subsidised (e.g. sale of imported maize in 1998) hampers the development of a competitive private trading sector.

Although there were also a few complaints in farming communities in Uganda about the pace of the liberalisation process, overall the agricultural liberalisation experience in the Ugandan context is positive. Although it is often argued that marketing boards offered an important, if not the only, marketing opportunity for remote farming communities, one must not forget that in the past most parastatal marketing boards in Sub-Saharan Africa were not sustainable due to continuous financial and management problems. The role of the Uganda Coffee Development Authority (UCDA) provides an interesting example of how a support agency can play a positive role in a liberalised export commodity chain. UCDA concentrates on activities such as, improvement of information flow, coffee quality improvement, training of sub-sector participants, encouragement of investment in the local roasting industry, etc.

In Uganda, the Civil Service reform also had impacts on the Ministry of Agriculture, Animal Industries, and Fisheries (MAAIF) including the reduction of staff numbers and divestiture of functions. In 1998/99, the remaining responsibilities of MAIFF include the following:

- agricultural policy formulation,
- setting regulatory standards in agriculture,
- making national plans for the provision of agricultural services and co-ordinating plans made by local government,
- control and management of epidemics and disasters relating to agriculture,
- conducting national agricultural censuses and compiling statistics related to agriculture.

As a consequence, the bulk of planning and implementation of projects and activities is expected to take place at District level. Other countries, where decentralisation figures high on the agenda, are likely to move into a similar direction.

Social environment

In most parts of Sub-Saharan Africa women play an important role in agriculture. Traditionally they are particularly involved in the production and processing of foodcrops, and significantly contribute to the transport of inputs and outputs around the farm (i.e. headloading).

Although women are slowly beginning to play a more prominent role in private business, there are still plenty of traditions and cultural beliefs that prevent them from exploiting their full economic potential. As a consequence, more interventions are required to strengthen women's role:

- Sensitisation through projects and mass media,
- Creation of educational opportunities for girls and women,
- Provision of women with better access to finance and other production factors,
- New technologies should take women's needs into account.

Partly pushed by the donor community, poverty eradication has become a key objective of government policy in many countries in Sub-Saharan Africa. For example, the Government of Uganda has made the Poverty Eradication Plan (PEP) one of the cornerstones of its policy. Other priority areas such as health, education and agriculture are expected to feed into the plan. Directly or indirectly, this can be expected to have a bearing on equity issues in communities. As already discussed above, not all members of a farming community will equally benefit from policy measures affecting access to marketing opportunities. The success of these policies will depend, amongst other things, on the extent to which all community members will be able to participate in and influence Local Government decision making.

Legal and regulatory framework

The lack of standards (weights, quality grades), in particular in the domestic agricultural marketing chain has often been quoted as a constraint to improved marketing efficiency. As a result, suggestions have been made that the standard of marketing will be improved by "introducing standardised weights and measures". (Poverty Eradication Plan, GoU). This seems important, however, decision makers ought to bear in mind that similar interventions have often failed in the past due to lack of demand by the players in the marketing chain or lack of enforcement. As a result it seems important to study this issue carefully prior to implementation.

The efficiency of agricultural marketing depends on how contracts are respected and enforced. If contracts are not respected and law enforcement is insufficient, this will inevitably increase risk and ultimately marketing costs. In Mali, lending risk as a consequence of a weak legal framework is perceived as one of the constraints in grain marketing. (Coulter and Tyler, 1993).

INFRASTRUCTURE

Road Network

In both Malawi and Uganda, the quality of the road network has been identified as the most important constraint to market access in remote areas. The summary of discussions at the District workshop in Lira, Uganda, illustrate some of the key issues. There are three types of roads in Lira district namely trunk, feeder, and community roads. It was found that the trunk and feeder road network was adequate but the problem was on maintenance of the existing roads. The problem of sub-standard work done on the roads was attributed mainly to:

- The current arrangement of maintaining the roads which is undertaken by the District Council without adequate technical back-up.
- Inadequate funding.
- Criteria used in tendering the roads for maintenance by private firms fraught with lack of transparency.
- Poor standardisation and inspection of roads which arises due to the following reasons:
 - Low remuneration of staff
 - Understaffing of the engineering department
 - Inadequate guidance by the technocrats to the District Council.
 - Inadequate murrum deposits in some places.

At the same time, roads figure very high on the priority list of governments of all three countries. The World Bank, African Development Bank, European Union, and most major bilateral donors have substantial programmes trying to improve road infrastructure in Sub-Saharan Africa. It is recognised that emphasis should be on maintenance. It is hoped that the formation of autonomous Road Authorities, which will have their independent sources of income (e.g. taxes on fuel), will lead to improvements in the sector. However, this is primarily geared towards the primary and secondary road network. The situation regarding community access roads is less clear at present.

The Rural Travel and Transport Programme (RTTP) has recently been initiated in all three countries by the World Bank, which, however, is unlikely to be the main donor of this initiative. RTTP embraces both rural roads and tracks, and means of transportation (more on the later below).

In the context of improving access for isolated communities, the following points need to be addressed in particular.

Harmonisation of approaches regarding the involvement of communities in the construction and maintenance of rural roads and tracks. Obviously, it is important not to obstruct priorities and practices to be established by local councils, but to bear in mind that in the past different donor funded projects employed different, sometimes conflicting, approaches. This concerned areas such as technologies (labour-intensive versus capital intensive), and remuneration of local communities (i.e. self-help versus cash or food for work). In this context it is important that Government Departments and donors agree on a standardisation of approaches which would still allow decentralised government authorities to implement their priorities within a specific context.

Greater involvement of the private sector and local communities in road and track maintenance should be encouraged. It is recognised, that besides an inventory of potential operators, this would require awareness-building, and training.

Guidelines should be developed for different levels. Whereas design criteria for national and regional roads should be centrally established, village access roads should be designed at community level, taking into account local requirements. Planning to this end should involve the traders, and other potential users of the roads/tracks. Design of roads and tracks should reflect current and potential volume of traffic (i.e. vehicles per day).

It ought to be recognised that road/track construction by local communities may have its limits, in particular in more difficult terrain (mountains, wetlands, etc). In these cases, external assistance is required for the construction of bridges and other major pieces of infrastructure.

Co-ordination at different levels is required. Prioritisation by local councils is important but this has to take place within District or even regional priorities. As compared to other rural infrastructures such as health centres or schools, where less local co-ordination is needed at local level, roads and tracks linking up several communities need more planning at a higher level.

Particularly, in areas where population density is low, it is important to identify inexpensive approaches. Local participation in the design of transport infrastructure has been found to lead to lower cost, lower technology solutions. CARE Zambia used an approach where communities provided materials freely and let road workers use their water supplies. As a result feeder roads were rehabilitated relatively cheaply: \$3000 per km, including the costs of water crossings (simple culvert \$700, drift \$400 – 700). Now CARE Zambia has increased the use of private contractors providing training and advice for small-scale contractors who can carry out construction and maintenance work at local level. (Hine, Nelson and Greening, 1998).

Based on case study work in Ghana, Hine (1993) argues that "it is estimated that replacing a footpath by a vehicle track may have a beneficial effect to the farmer of over a hundred times more than improving the same length of a poor earth track to a good quality gravel road". At the same time he suggests that there is a need for new roads "to open up remotely located agricultural areas".

In the local context, it might be appropriate to put more emphasis on means of transportation (see section below), e.g. combinations of so-called intermediate means of transportation (IMTs), and trucks. (Sieber, 1997). It is argued that combining IMTs (for short distances) and motorised transport (over long distances) should lead to lower total transport costs.

Greater use of labour intensive methods appears to be justified given the erosion of wages of unskilled labour in most Sub-Saharan African countries (Von Braun, 1993). The situation in Uganda, Mali, and Malawi is not different.

As for the issue of paying workers on Labour Intensive Public Works Programmes in the form of cash or food for work, there is no blueprint formula. On the contrary, this depends very much on the conditions encountered by targeted population groups. However, decision-making should be based on a sound knowledge of the food and labour markets, in order to avoid distortions of these markets (von Braun, 1993). At the same time, the MASAF (Malawi Social Action Fund, World Bank funded) programme in Malawi prefers cash-for-work arrangements since food-for-work payment requires more logistical preparations (e.g. timely delivery of food as payment).

There is the danger that the use of conflicting approaches in relation to the payment of unskilled workers can damage the drive for self-help initiatives in villages. As a consequence, co-ordination between government departments, donors and NGOs is necessary. The result of this consultation should be guidelines to be used by Local Government.

Technical standards of roads should reflect the real needs in terms of potential vehicle usage. Where this is not the case and where standards are set by central government departments and donors without taking into account real service consideration, the result is excessive roads width and cost and hence fewer roads (World Bank, 1994).

Self-help in the construction and maintenance of roads is most likely to succeed when the project carried out by the community is relatively small-scale, and to its direct and exclusive benefit (World Bank, *ibid*). This may be the case for village access roads. Trunk roads and feeder roads, which serve a wider public, require contractual arrangements with paid labour.

There is the issue of barriers to close roads after rain in order to avoid damage. Problems with corruption should be easier to handle following decentralisation. Transparency and awareness building at local level is required.

To sum up, some points to improve the situation of community access roads in remote areas:

- Guidelines are required for road construction and maintenance at community level, encouraging community participation. These guidelines should be flexible enough for implementation at sub-county level;
- Avoidance of roads that are too large; Criteria should reflect villagers' needs based on current and potential traffic volume;

- Labour intensive construction technologies should be encouraged;
- Encouragement of self-help initiatives at the lowest level, in particular if roads are to the exclusive benefit of one community; however community participation should not take place at the expense of the poorer and vulnerable parts of the rural population; If it is felt that there is a danger in this respect, the possibility of contractual arrangements even at lowest levels needs to be explored.
- Given that communal labour is often associated with forced labour, and the fact that these schemes are notoriously difficult to implement during election times, it appears that a substantial amount of awareness building is required in this respect.
- It ought to be recognised that villagers need outside support in particular where the terrain is more difficult (hilly, water streams) or where distances are too large; Contractors should be used for the construction of bridges, culverts or drifts.
- If private contractors are used, it is important to ensure transparency during tendering, implementation and evaluation. Without adequate quality control the private companies are unlikely to be more efficient and effective than the public sector.
- In the short-term, NGOs should be involved in Districts with weak local capacity. Capacity building would be required for private sector contractors and Local Government to take over in the medium to long-term.
- Co-ordination at a higher level (e.g. Region) is required where roads and tracks form part of a local network.
- In Uganda, the issue of feeder and community access roads ought to be fully included in the Plan for the Modernisation of Agriculture (PMA). Hence, members of the Ministry of Works should form part of the PMA technical committee.

Means of Transportation

In both Malawi and Uganda, lack of means of transportation figures prominently amongst the constraints to market access.

"Rural people in Africa devote a significant amount of time and effort to transport, much of which involves walking in and around the village and is geared to domestic and subsistence needs" (Ian Barwell, The World Bank, Discussion Paper no. 344, 1996; found on World Bank web-site January 1999). Women are often the ones who are responsible for the bulk of the transport burden in rural areas, and in many cases this is aggravated by male migration to urban centres. (Ellis, 1997).

Head-loading, in particular by women, is a common feature of rural transport in remote areas in Uganda. This includes transport of produce from the field to the farm, and from there to markets. According to a study by Barwell (1996, cited in Akidi et al 1997) in Mbale District, domestic transport – mainly for water and firewood collection - constitutes 73% of household transport demand. Travel and transport for farming activities and marketing made up only 18% and 6%, respectively. To some extent, the latter figures are likely to have been influenced by a high degree of subsistence production in the farming system studied.

According to Akidi et al (1997), at the national level, about 70% of the agricultural produce sold at local markets are transported by head-loading (i.e. mostly by women and children). Bicycles, which are mainly used by men, account for 20%, motorised transport for 8%(i.e. mainly pick-up trucks), and donkeys for 2%. The use of ox-carts or donkey carts is very limited, due to lack of technical know-how concerning their manufacture, high initial cost and lack of traction animals. 93% of transport of produce between the farm and homestead takes place by head-load.

Motorised transport. Lorries, trucks and pick-ups play an important role in long-distance marketing of agricultural produce. Although the capital cost of lorries is highest, they also have the highest transport cost effectiveness (i.e. kg.km/\$) (Grebresenbet et. al 1997). Both capital cost and cost effectiveness are lower in the case of smaller modes of motorised transportation such as pick-up trucks or mini-buses. Nevertheless, in terms of effectiveness the latter are still far ahead of any other means of rural transport, such as ox-carts or two-wheel tractors and carts.

Tractor schemes, have failed in most countries of Sub-Saharan Africa. Amongst other things, this was due to lack of profitability of the operations, and management and maintenance problems.

The design of buses operating in rural areas could be improved to the benefit of small-scale farmers and traders using them for the transportation of goods.

It goes without saying that motorised transport needs a minimum of rural road infrastructure. At the same time, there are question marks behind the road standards required in remote rural areas. It is widely acknowledged that trunk roads have an important role to play in opening up an agricultural region, however, the exact requirements for motorable feeder and community access roads are less well known.

Given its role in the economy, it seems important that Central and Local Governments take measures encouraging the development of a competitive transport sector. This includes for example:

- Avoidance of cartels in the form of transport unions (e.g. Ghana) or otherwise;
- Avoidance of excessively high taxes on fuel, and vehicle importation and ownership;
- Although safety and environmental concerns are important, relevant regulations should not impede the development of a transport sector.

Intermediate Means of Transportation (IMTs). Given the limited quantities which can be transported, the speed involved and the maximum distances to be covered, head-loading is one of the most expensive means of transportation. At the other end of the spectrum, motorised transport (e.g. trucks, tractor-trailers) is often not profitable in isolated villages. As a consequence, it has been argued that Intermediate Means of Transportation (IMT) have an important role to play in this context.

Between 1992 to 1996, the UNDP/ILO sponsored Pilot Integrated Rural Transport Project (PIRTP) was carried out in Malawi by the Ministry of Local Government and Sports. Besides means of transportation, the project also covered aspects related to infrastructure such as bridges in rural areas and community access roads. The project has later given birth to the Malawi Rural Travel and Transport Programme, which is a World Bank initiative but looking for support from other donors.

Table 2: IMTs given out on credit by PIRTP in Malawi

Type of IMT	Lobi		Embangweni (Mzimba)		Neno (Mwanza)		Total
	Male	Female	Male	Female	Male	Female	
Bicycles	145	67	110	26	192	17	557
Bicycle trailers	3	2	7	0	3	0	15
Wheel barrows	31	2	23	1	23	2	82
Farm carts	16	0	12	1	16	1	46
Hand carts	1	0	0	0	0	0	1
Donkeys	0	0	0	0	4	0	4
Tricycle	0	0	0	0	1	0	1
Stretcher	2	0	1	0	0	0	3
Total	198	71	153	28	239	20	709

Source: Anonymous, 1997.

The figures in Table 2 illustrate the importance of bicycles as a means of transportation in Malawi. At the same time, one ought to remember that a bike still represents a large investment for resource poor farmers. It is estimated that in Malawi a cheap bicycle costs the equivalent of 160 days rural agricultural income compared with 80 days in Bangladesh.

Table 3 provides an overview of IMTs available in Mali. The total number of vehicles suggests that Mali is quite well endowed with IMTs. For example, the total of about 150,000 carts would mean that approximately 10% of the country's farm households own a cart. Although only a minority of farmers own carts, this percentage would mean that the majority of them could use carts at least on a hired basis. In Mali, the majority of carts are drawn by donkeys. In fact, for cost reasons, even owners of oxen often prefer to use donkeys and donkey carts for transport. The now privatised parastatal workshop SMECMA and the cotton parastatal CMDT have certainly played an important role in the dissemination of carts and cart technology in Mali.

Table 3: Situation of intermediary means of transportation in Mali by administrative region

Region	Carts	Pirogues	Bicycles	Motor-cycles
Kayes	17 280	285	5 640	12 443
Koulikoro	29 652	920	32 310	6 489
Sikasso	37 274	7 662	58 864	19 613
Segou	47 855	3 010	38 780	11 249
Mopti	17 541	11 675	7 501	9 306
Tombouctou	96	1 003	17	178
Gao/Kidal	190	807	60	53
Total	149 888	25 362	143 172	59 331

Source: SOCETEC 1998, based on Ministère de l'Administration Territoriale et de la Sécurité. Recensement administratif 1996.

The main constraint to access to IMT for resource poor households is the initial capital expenditure - appropriate credit schemes would be necessary for households to be able to pay for donkeys/carts etc. Evidence from Kenya showed that farmers were able to pay off their loans for ox carts after only one harvesting period (IT Transport, 1996).

Potential manufacturers of IMTs require training and credit for setting-up a business. In Malawi, one of the problems encountered in this respect, was that carpenters or metal workers did not have sufficient education to operate certain types of machinery or lacked access to electricity which was a problem for welding operations.

Ways forward and issues involved:

- Governments ought to avoid regulatory barriers (i.e. including high taxes) blocking the widespread up-take of motorised and non-motorised means of transportation.
- Adequate availability of credit for farmers and workshop owners is important for the up-take of means of transportation.

- Government staff have to be made aware of the benefits of Intermediary Means of Transportation. In the context of small-scale farming, animal traction and other forms of IMTs do not represent an out-dated technology. IMTs should be given more prominence in training and extension curricula.
- Due to socio-cultural constraints, awareness building amongst the rural population is necessary. This should make certain means of transportation more acceptable to women (e.g. bicycles, donkeys, etc).
- A programme supporting the introduction of intermediate means of transportation should have an adequate element on animals (i.e. management, nutrition, and health of draught animals such as oxen and donkeys).
- Similar to the UNDP/ILO project in Malawi, pilot projects should be carried out to (re)introduce IMTs and agricultural mechanisation in Uganda. The NGO ACT is operating in Kibaale District, however there are doubts whether scale and timeframe are sufficient to ensure success.

Market Infrastructure

Poor market infrastructure and lack of an adequate network were rated as the fourth (Uganda) and fifth (Malawi) most important constraint to marketing at District level workshops.

It was felt that community markets only require a minimum of investment. In the case of some donor projects which were badly designed, not taking account of the needs of rural communities, expensive market infrastructure was underutilised or not used altogether. According to Mittendorf (1993), "improving infrastructure at rural market centres is mainly an institutional issue, namely what is the best institutional arrangement to provide the necessary maintenance and investment services." The experience from Uganda shows that the management of rural markets by private operators does not lead to necessary investment. As a consequence, it was suggested that local authorities need to undertake a minimum of investment prior to handing it over to the private sector for management purposes.

In Malawi, it is important to find sustainable institutional solutions to markets where ADMARC is pulling out. This includes the management of storage space. The private sector should be given priority wherever possible.

The following points can serve as guidelines for the establishment of markets:

- Markets should be located at central points reducing distances for producers and traders,
- Markets need a minimum of infrastructure to be provided by LG, such as platforms, permanent shades for all-weather business, sanitary facilities, and water supply. The construction of warehouses should be undertaken by the private sector.
- The system of weekly or fortnightly markets may need enhancing. Announcements through the mass media (i.e. rural radio) should be envisaged.
- Following an initial, moderate investment, the running of the markets should be tendered out to private operators.

Storage

Storage allows greater flexibility in the timing of marketing. At the local level, storage enables producers and traders to delay the marketing of produce in order to take advantage of seasonal price fluctuations. In the context of remote communities, storage periods are likely to be longer owing to the lack of marketing opportunities. In addition, it may be necessary to bulk up produce prior to selling in order to achieve economies of scale for transportation.

Storage is a private sector activity. As such it is important that research and extension services prepare relevant messages on technical aspects and the economics of storage for the main players, i.e. namely farmers and traders. Farmers generally will require small storage facilities, which are appropriate for the scale of their business, whereas traders require warehouses, which can be owned or hired.

Protection of stored produce against insects, rodents, mould, etc is important to preserve the value of the commodity. Aside from technical messages on the use of chemicals or natural protectants, it is important that these means are available.

Storage is associated with capital costs. Traders often depend on credit (e.g. inventory credit) to be able to purchase commodities which can be stored. Although farmers may not require capital to store produce, storage still leads to opportunity costs. In many cases farmers are forced to sell produce after the harvest due to financial commitments. This could be prevented if farmers or farmer associations had better access to credit facilities.

Processing

Processing can range in scale from household level, low technology, processing, to fully mechanised factories. Farming communities lacking opportunities to sell their produce in fresh form are often forced to endeavor in processing activities (e.g. drying of roots, fruits and vegetables, or smoking of meat). With respect to marketing, processing at farm level serves two main functions:

- it can add value to the good, thereby increasing the potential marketability and profitability of the product; and
- processing can preserve the produce, thereby increasing the time available for marketing.

At national level, agro-processing industries can generate demand for agricultural raw materials, including crops traditionally viewed as foodcrops. "New market opportunities are now providing a still largely unexploited niche for small-scale processing" (Spore 65, September – October 1996). The final product may be exported or consumed domestically. Aside from the traditional cash crops, other examples include:

- Vegetable and fruit processing (e.g. chilli sauces, dried fruits),
- Animal feed processing (e.g. dried cassava and by-products from oilseed processing and maize milling),
- Starch industries (e.g. cassava or sweet potato, in particular in Asia),
- Milk processing,
- Fish processing.

A favourable investment climate is a condition for the creation of a successful agro-industry. It is important that the investment climate is propice not only in the major cities but also in the Districts. Needless to say, a minimum of infrastructure is required to stimulate agro-processing industries, such as water, electricity and communication facilities. Investment promotion authorities need to provide relevant information for potential domestic and international investors.

INFORMATION

Facts about information

The lack of market information was the second (Uganda) and fourth (Malawi) most important constraint to agricultural marketing identified at the District workshops. In both countries, the Government-run market information services are either defunct (Uganda) or struggling with a number of weaknesses (Malawi). The Market Information System in Mali has recently been revamped into the Agricultural Market Observatory (*Observatoire des Marchés Agricoles*, more on this below).

The need for market information is unquestionable. "Up-to-date, or current, market information enables farmers to negotiate with traders from a position of greater strength. It also facilitates spatial distribution of products from rural areas to towns and between markets. Well-analysed historical market information enables farmers to make planting decisions, including those related to new crops. It also permits traders [and producers] to make better decisions regarding the viability of intra and, perhaps, inter-seasonal storage." (Shepherd, 1997).

Shepherd (*ibid*) distinguishes between market information and marketing information. The former emphasises collection and dissemination of prices, and, in some cases, quantities, whereas the latter represents a much wider concept, including information on market channels, potential buyers and their contacts, payment requirements, quality standards, etc. In this report, only the term market information will be used.

Larger-scale traders usually have their own information networks relying on more or less modern communications technology (e.g. fax, e-mail, etc). Although generally quite well informed of local markets, small-scale traders lack the resources to monitor markets on a regular basis (Shepherd, *ibid*). They depend more on "word-of-mouth" information, which depends on the existence of traditional communication channels such as telephone lines, and a functioning transport infrastructure. The latter not only results in larger quantities of goods transported but also improved flow of information.

Although it is increasingly argued that users should pay for information, in the context of resource poor farmers this seems unrealistic. For the time being, information should be considered a public good in the context of small-scale farming in Sub-Saharan countries. Especially where mass media such as radios are used it is difficult to recover costs. Information provided through the printed media (e.g. newsletters or newspapers) could be charged directly or indirectly to the user, but there are issues such as affordability, delivery delays, quality of information, and presentation (i.e. usually not in vernacular language).

It must be recognised that the provision of information for small-scale farmers ought to be seen in the context of adult education. Universal Primary Education (UPE) is expected to generate long-term benefits, however, if agricultural modernisation is to take place within the next one or two decades, then adult farmers will require more information not only of markets but their business and environment in general.

In particular in remote areas, demand for information needs to be created. Farmers need to be made aware of their right to information, how they can make use of it, and how to influence its delivery. This can take the form of "pressurising" an extension officer to provide a particular piece of information or request better packaged agricultural radio programmes from the local FM station.

At the same time it is important to bear in mind that provision of information alone, however good its quality, is not sufficient. Markets must be sufficiently competitive so that farmers or small-scale traders can take advantage of opportunities offered. Aside from the availability of production factors, farmers must have the entrepreneurial spirit and knowledge to be able to make use of information. Obviously, and last but not least, if increased market orientation would lead to unjustified risk to their livelihoods then farmers cannot be expected to adjust production accordingly.

Types of market information required

According to Robbins (1998), "farmers need to be able to compare local market conditions with those further away, ... prices between one grade of product and another, ...and they need information on individual traders track record so that they can avoid those that are untrustworthy".

In Mali, the execution of needs assessment studies was one of the first activities of the newly established "Observatoire des Marchés Agricoles". Target groups for this exercise included, farmers, traders, processors, and institutional decision-makers.

According to Sanogo (1998), farmers requested the following types of market information: Different food security and cash crops (i.e. not only cereals should be covered), Supply and demand situation and prices on markets, Availability and prices of inputs (including transport, equipment, fertiliser, etc), Availability and conditions of credit.

As for processing and storage, the following information needs were expressed by producers: Storage technologies, Availability and price of chemicals, and Demand for processed products. Livestock producers requested information on, disease control, availability and price of inputs such as drugs and feed, livestock prices.

The survey also revealed that farmers have a preference for local radio stations broadcasting in vernacular language. This indicates that at least part of the information should be related to the context of a specific locality (i.e. Commune or region) rather than the nation as a whole. This may in particular apply to farmers operating in remote areas.

Traders expressed the following information needs: Traders buying and selling on the domestic market, prices, demand and supply volumes, contacts of traders, information on storage technology.

Export traders requested information on prices, supply and demand situation, contact details of traders, quality standards, regulations, market opportunities. In the context of traders it is important to mention government policies affecting domestic and

export markets. For example, unannounced subsidised imports of cereals or inputs such as fertilisers can create problems for traders.

Processors require three types of information related to, raw material supply (prices, volumes, sources, production statistics), processing technology (prices and suppliers of machinery, new technologies), and sales (price, demand and distribution of products, information on competing imported products).

Decision makers require information on: Commodity system, agricultural statistics, food aid, food security stocks, regulations on national and international markets, support programmes for operators active in the respective commodity chains, availability and conditions of credits, prices of agricultural products on the national, sub-regional, and international markets.

This clearly shows that farmers and traders require more than market information, which is primarily based on prices. Technical information includes both pre- and post-harvest aspects of farming. Traditionally, extension services were given a leading role in providing this information, however, at best, their results have been mixed.

Particular emphasis has been on production whereas farmers in commercial agriculture equally require technical information on post-harvest aspects, including storage, transport, processing and marketing. As a consequence the latter points need to be strengthened. More about this below in the Section on extension.

If agriculture is to be modernised then farmers need a more commercial approach to their business. This requires a minimum exposure to farm management concepts such as gross margins, profitability, etc. In this respect, extension officers, be they from Government departments, NGOs, or private sector, have an important role to play in communicating these concepts. Needless to say, that the extension staff themselves require more exposure to commercial approaches.

Although not directly linked to market information, institutional information has an important role to play in rural development. This may correspond to civic education whereby villagers are made aware of their rights and duties. In particular, following decentralisation, it is important that Local Government actions and decisions are made as transparent as possible.

Means of Communication

Rural Radio

“Radio is clearly the most effective and appropriate means of communicating information in remote areas to farmers many of whom have poor literacy skills.” (Robbins, 1998). This certainly also applies to the dissemination of market information.

Broadly, there are three types of radio stations:

- National radio station,

- Commercial local FM radio stations,
- FM Community radio stations (small radius, about 50 – 100km) often set up by NGOs.

The main advantage of national radio stations is the large coverage they can achieve. This is partly due to the fact that listeners are used to the programmes and schedules of the national radio and therefore prefer to tune in despite the existence of new stations.

Disadvantages of national radio stations include:

- generally high fees for airtime,
- sometimes political interference,
- if there are many languages and dialects spoken in the country, it can become difficult to reach the majority of the population,
- National radios, which are usually based in the capital city, may be useful for spreading very general messages concerning the entire country, but they cannot take account of local information requirements.

As the term already implies, commercial FM Stations tend to have a commercial, profit-making approach. They often charge relatively high rates for airtime, which may be an indication of lack of competition, or high demand for airtime. Income may not only come from advertising, but also broadcasting of development programmes, and personal messages.

Although generally set up without support, in some countries such as Mali they receive a subsidy at least during the first years of operation. Often the owner of the station or key employees have a background in journalism, which is of advantage when it comes to issues such as programme making and broadcasting.

The radius of FM Stations can vary considerably. Smaller stations with less expensive equipment have a radius of about 50 km which can increase to 100km if the transmitter is well positioned (e.g. on top of a mountain). Larger stations with several transmitters can cover several regions of a country as the example of Voice of Toro in Uganda shows.

Community Radio Stations, often sponsored by NGOs or donors, are stations that can be particularly useful in remote areas where no commercial FM station can be received. In some cases they are based on volunteer work. As a consequence they are obviously in close contact with their listeners, but are also likely to lack professional broadcasting and management staff. This can be a problem once the initial enthusiasm for the new station is gone and programme making becomes routine. They require financial support from donors, NGOs, or the Local Government.

Estimates of costs of setting up a Community Radio Station vary widely. According to Myers (1998, based on Louarn, Panos 1994), small stations “cost as little as £15,000 to set up in terms of initial investment in equipment”. Larger stations may cost up to £50,000 and more, including costs for broadcasting equipment, transmitters, studio, vehicles, and training of personnel. In addition, there are often

unpaid inputs from volunteers. Insufficient funding and the absence of adequate training and support (e.g. means of transportation for volunteer staff) can jeopardise the success of a station.

With 107 licensed radio stations, out of which 92 were operational in early 1999, Mali can be considered a communication laboratory. For example, there are five stations alone in the secondary urban centre of Segou and a total of 14 in the Segou Region. The rapid expansion of radio stations was sparked by the downfall of the Traoré regime in 1991. Until then only one, Government run, radio station existed in Mali.

Findings from survey work as part of a workshop organised by CTA and GRET in Mali in 1997, highlight the importance of "staying in touch" with the audience (Sultan, 1998). For example, it was found that women prefer to have "their" programmes broadcast during the evening hours after 8pm, when they have more time, as compared to the rest of the day. Another lesson drawn was the fact that "listeners frequently regard a radio station as their 'property' and therefore tend to use the language of the 'stakeholder', when talking about the subject".

Myers (1998) describes the successful use of local radio broadcasting in an NGO project promoting reforestation around Douentza in Mopti Region. The success of the radio campaign was due to the following factors:

- "Firstly, the radio campaign did not stand alone,; it backed-up an on-going extension programme of face-to-face contact between development workers and villages.
- Secondly, the radio promoted ideas and techniques, which were not totally new to listeners; it intentionally built on traditional knowledge and recommended small adaptations to what people were already doing.
- Thirdly, the campaign benefited from being attached to a popular local radio station which people trusted.
- Fourthly, the campaign was run in a relatively remote area where people do not have access to much information or entertainment.
- Finally, and crucially, the radio campaign provided new information with which listeners could make their own decisions".

This suggests that not only market information as such but also technical information can be successfully broadcast to target population groups. As a consequence, extension services should be encouraged to make wider use of local radio stations, in particular in remote areas which, as yet, have been neglected by projects and extension services.

Based on project experience in Meru District in Kenya, Lloyd Morgan and Mukarebe (1998) describe "how audience research and imaginative programming have enabled radio to reach women farmers". The project was in support of Kenya's Agricultural Information Centre (AIC), trying to develop new approaches to radio programming in order to meet rural women's needs.

In a first step, the AIC radio research team, which was based on 13 Ministry of Agriculture Technical Assistants, was trained in Participatory Rural Appraisal

techniques. This helped the team to undertake both quantitative and qualitative audience research on issues such as: radio ownership, access to radios within households, liked and preferred programme content, style (including language), time and duration.

Based on the research findings, a soap opera was produced, which was supposed to be entertaining as well as able to raise awareness. The fact that different population groups of the target area found themselves represented in the drama significantly contributed to its success. In addition, the soap opera was supported through a sister, magazine programme, offering factual messages related to issues raised in the soap opera. The 13 technical assistants collected all the material for the programme, ensuring at the same time constant feedback from the audience. The programmes reached a weekly listenership of 23 percent of the target population.

Following an evaluation, a similar approach has been taken in developing two programmes that are broadcast on the KBC National Service in Ki-Swahili. As for financial sustainability, a commercial company, which was at the same time advertising its product, was found to cover the expensive air-time on KBC. In addition, development organisations such as Plan International, GTZ, and CIP use the radio programme to transmit their messages on a commercial basis.

At the same time one must bear in mind that the project benefited from donor support, as a result of which there were sufficient resources to produce well-presented programmes. The question remains to what extent such an approach would be feasible without initial external sponsorship.

Comparing commercial and community stations, it appears preferable to establish the latter primarily in areas where commercial stations cannot be received. Otherwise it seems best to use commercial stations for the dissemination of the different types of information required by isolated farming communities. Different avenues of funding need to be explored. For example, one option consists of companies involved in input supply also sponsoring agricultural programmes on the radio.

Other means of communication

For a start there is the word-of-mouth communication, which plays an important role in most parts of rural Africa. This type of information flow is influenced by the volume of traffic and movement of people, which in turn is a function of road infrastructure, availability of means of transportation, etc. Markets and other centres of social gathering are places of high turnover of word-of-mouth information.

Dialogue is the type of communication used at workshops or seminars where, for example, members of medium and small-enterprise associations benefit from an exchange of information on various aspects of their business (MSEPU, 1998). At the same time, this type of communication is commonly used by agricultural extension staff providing farmers with information. Exhibitions, trade fairs, and study tours are a form of communication where farmers and traders mainly benefit from the visual impression of an object. Although they can be very useful, it is unlikely that the bulk of the population in remote, rural areas will be able to benefit from them.

In the past, printed media have played an important role in Market Information Systems. Often, information was disseminated in newspapers, newsletters, and bulletin boards. One of the key problems with printed media is language and illiteracy. The majority of farmers in isolated communities are unlikely to read English. Other problems with printed media such as newspapers are delays in reaching remote villages. On the other hand, posters written in vernacular languages have proved to be effective in communicating straightforward technical messages.

Mobile video vans are an effective form of audio-visual tool in areas with easy road access. However, they are less appropriate in remote areas and where large population numbers need to be reached. Maintenance of equipment can be an issue.

New communication technologies, which started only to exist during the 1990s can be very useful. Examples include cellular phones, e-mail connections and the internet. Cheaper satellite technology has greatly helped to spread these means of communication. It may well be the case that due to this rapid technological development, the construction of traditional telephone lines may become superfluous in the very near future. The usefulness of telecentres (radios, phone and fax in one), which have been installed in sub-counties in Uganda on a pilot basis, needs to be monitored.

At the same time, according to Bay Petersen (quoted in Robbins 1998), "in our enthusiasm of what electronic information systems can do, we must not forget the problem of equity. If this is overlooked, it seems likely that unequal access to highly effective information systems is going to follow and reinforce the present inequalities of wealth. If we emphasise electronic technology too much in agricultural information we may find that we are helping only those who already have the best access to information to get more of it."

Market Information Systems and the Way forward

Mali's experience

"Market Information Systems (MIS) have repeatedly proven to be unsustainable and where they have endured they have often failed to provide commercially useful advice, confining themselves to the gathering of, frequently unused, data." (Shepherd, 1997).

Mali's agricultural Market Information System provides an interesting case in this respect. Introduced in 1989 it concentrated on the collection, processing and

dissemination of information on cereals and livestock markets (Sanogo, 1998). However, according to Galtier and Egg (1998), Sanogo (1998), Timbo (1998), it was increasingly recognised that this system had a number of shortcomings, which were to some extent influenced by agricultural and economic policy changes. The shortcomings of Mali's MIS can be summarised as follows:

- Too much emphasis on price,
- Emphasis on cereals and livestock only,
- System too bulky and expensive,
- No projections / forecasting,
- Inappropriate dissemination techniques, and
- Lack of demand for information.

As a consequence of these shortcomings it was decided to revamp the MIS and change its institutional setting. The new project, Observatoire des Marchés Agricoles (OMA), which started in 1998, is funded by USAID and implemented by APCAM (Assemblée Permanente des Chambres d'Agriculture du Mali), in collaboration with Michigan State University. The objectives of the project were to create a decentralised market information system which is efficient, viable and sustainable (i.e. not requiring donor support) (Timbo, 1998).

A participatory needs assessment exercise was carried out to identify the information requirements of the different stakeholders such as farmers, traders, etc. This exercise was certainly a step in the right direction. Private sector stakeholder involvement is one of the keys to the success of an MIS.

As for the financial independence, it is difficult to foresee the system working without donor support. The annual operating cost of the new system is estimated at 100 million FCFA (i.e. approx. US\$170,000). Although part of the costs can be recovered through the sale of information, this is likely to work only with commercial operators. In remote areas, information, in particular that disseminated through radio, has more of the characteristics of a public good.

Given the amount of information requirements there is a danger that the "new" system will become even bulkier than the old one. As a consequence, data collectors and analysts ought to be careful not to repeat the mistakes of the past. A flexible approach is required.

The information requirements identified through the survey also suggest a number of different sources of information. Market information as such should be supplied as much as possible through the MIS. However, other types of information may be better supplied by extension services, private companies, or directly by research institutions (e.g. on new processing technologies). Obviously this depends on the location.

Galtier and Egg (1998) suggest several tracks to be pursued beyond the traditional Market Information System. In particular, this would require tackling of the problems causing high transaction costs (i.e. high cost of partner search, high negotiating cost, high opportunistic risk), lack of innovations, low investment and inadequate storage facilities. For example, the high costs of partner search could be reduced through the

establishment of fairs or the broadcasting of ads specifying the exact needs of buyers and sellers in terms of quantity, quality, price, terms of payment, etc.

Although, in the farmers' interest, it is desirable to have several sources of information available (i.e. information pluralism), it is also important to co-ordinate efforts between suppliers. In particular, if there are projects (i.e. NGOs or other) collecting or disseminating certain types of information, it seems appropriate to avoid duplication. This is particularly the case in remote areas, where resources are often scarce. Decentralised government structures should allow better co-ordination in this respect.

Ideas on a decentralised Market Information System

The following paragraphs do not attempt to provide a complete blueprint but to provide some ideas for a possible way forward. This would include the following elements:

- A decentralised, flexible, information system, bringing on board all the main stakeholders (e.g. LG, private sector associations, NGOs, Radio Stations) should be envisaged,
- Government (Central and local), donors and NGOs ought to acknowledge the importance of information and make necessary resources available. Information, in particular if broadcast through mass media, is a public good in remote areas. Private sector sponsorship should be sought for the MIS but this is unlikely to cover the bulk of the funding requirements,
- Pilot projects are required to identify how system should be set up at District level; lessons can be learnt from the IDRC funded project on "Information Accessibility to the Micro- and Small Enterprises" in Uganda, which is executed in four pilot districts of Uganda. Possibilities where MIS could be placed at local level include Chambers of Commerce and Industry, or National Farmers Union in conjunction with local administration. This may differ from District to District depending on the resources available. Given the scarce resources available, it should be avoided that several independent information centres will be established at District level.
- As far as possible, there should be direct exchange of information between information officers of different Districts. However, although the system should be based on decentralised and flexible principles, it requires a Focal Point at the Centre for two reasons, namely (a) network co-ordination, and (b) a place, where some selected District level data (e.g. key market indicators) are gathered and processed.
- The system should be demand-driven reacting to the needs of the target population groups (i.e. primarily small-scale farmers and traders). This process should start with a participatory needs assessment, followed by an on-going contact between target groups and District Information Officers. Agricultural extension staff may have to play an intermediary function in passing on farmers' information needs,

which should not be regarded as static but changing depending on the agricultural calendar and other factors.

- Local Radio should be a principal means of disseminating information. If possible, commercial stations should be used. Other modern technologies should be used for data gathering and processing. Radio spots and programmes, however long they may be, need to be well presented (i.e. should not be boring), and broadcast at the right time and in the right form (i.e. language, etc). This requires training on behalf of the District Information Officers and others involved in the Market Information System. Radio stations have to carry out audience research to keep in touch with their clientele.
- NGOs may have a role to play where local capacity is weak. This may involve assistance to the Local Government in setting up a community radio station, training of information officers, and provision of transport and equipment. At the same time it is important that the institutional side of the MIS is sustainable. The creation of unsustainable units, which do not form part of the local institutional set-up, should be avoided.

FACILITATING FUNCTIONS

Community Organisation

Group actions by farmers has considerable potential for increasing market access. Co-operative action can be defined as "a group of economic entities who agree to act collectively in order to further their joint and individual private interests". (Jaffee, 1995). With respect to market access, the advantages of group actions are as follows:

- counter problem of lumpy investments in infrastructure and services: costs can be shared and access to value adding activities enhanced. Individuals are unable to make relatively large capital investments, especially in the absence of credit sources. By pooling funds, groups can make joint investments in processing facilities, storage facilities, transport infrastructure or vehicles, and so on.
- they can internalise certain externalities and therefore allow for the private provision of certain public goods.
- they can reduce risk by pooling individuals risk (though this may lead to unwise and over-risky decisions).
- can lower transaction costs: e.g. by performing screening roles; gathering and disseminating information about members;
- co-operatives can exercise or counter market power: collective negotiations; controlling with-holding members supply to the market, etc.
- economies of scale can be realised by joint activities, for instance the purchase or marketing of goods. (Goodland and Kleih, 1998)

Although the potential advantages of farmer co-operation have long since been recognised, implementing group formation and operation has proven far more difficult. Reasons for failure:

- Groups have been formed too quickly and too much has been expected of groups too soon.

- Responsibilities given to the groups have exceeded their capacities. Responsibilities range from co-ordination of activities, such as marketing, to the joint ownership of assets, such as vehicles or storage facilities. Evidence shows that the former tend to have better chances of success as skill and experience for such activities are typically less complex (Stringfellow et al, 1997);
- Groups which have been formed in communities where there is not a culture of co-operation often fail, especially if the management of jointly-owned assets is involved. This stresses the need to understand local social and cultural conditions prior to attempting to foster co-operation.
- Co-operation has been enforced in some cases, especially when justified on ideological grounds. When these approaches have failed, it has led to a general resentment and suspicion of the concept of externally-led co-operation initiatives. Groups only succeed when their members perceive the benefits of co-operation and then come together in a group over which they have a sense of ownership. Self-selection is important for peer pressure to be effective.
- Potential problems of group activities: free-rider problem - this occurs when an individual from inside or outside the group is able to capture the benefits of the group without contributing to the costs.
- Size of group may be important: small groups may have advantages over larger groups as they are easier to manage.
- Subsidised activities or donated equipment may undermine farmer groups. Groups may form merely to access subsidies, and quickly disband after the benefits of forming a group have been reaped.

Linkages between the groups and the wider economy will determine the potential benefits of co-operation, and the chances for the success of the group. Stringfellow et al (1997) identify two types of relationship that groups have with other market entities. Firstly, there are those which are termed "linkage-independent", where groups act independently in forging economic relations with other market intermediaries. For example, groups may make bulk purchases from input suppliers. The second type are "linkage-dependent" which are dependent upon an outside agency which has a heavy involvement in the activities of the group.

This latter type includes credit groups and outgrowers schemes. Marketing frequently plays an important role in these groups (see examples in Stringfellow: UVAN Ltd. Uganda; ITDG, Chivas Region, Zimbabwe). They are based on the understanding that both sides - the group members and the private company - benefit from the linkage. Farmers may benefit from having a secure market for their produce at a pre-determined price. Companies benefit from having a secure supply of raw materials which may be produced at lower cost than by the company using employed labour. Companies also benefit from a lowering of transaction costs - transactions are interlocked (Dorward et al, 1997). Risks and costs to the private company are reduced as:

- communication with the producers is facilitated by channelling information through contact farmers;
- peer pressure amongst the members may prevent producers from reneging their contracts.

Even though these linkage-dependent marketing-based groups provide a potential means of increasing market access, their applicability to remoter areas is probably

limited. The transportation costs may dissuade private companies from engaging with remoter communities, and limit the amount of supervision.

The state may have a role to play in facilitating the formation of self-help groups and by forging relationships between these groups and other market actors. There is a clear need for training in business and management skills. The provision of training itself requires careful consideration, as financial self-sufficiency (through, for example, charging groups for training) is likely to be difficult unless groups are well-established and see the benefits in receiving such training. Donor assistance may be necessary, possibly channelled through local NGOs.

NGOs can play an important role in promoting farmer groups for marketing and other purposes. In the case of a CARE project in South-West Uganda, collective marketing was suggested by a number of individuals and farmer groups who were consulted during the establishment of a marketing strategy for the project. (Kindness, January 1998). It was felt that this would increase bargaining power, and allow them to use more expensive forms of transport enabling them to access more distant markets. From CARE's experience in that project it is preferable to work with groups, which have a common interest, instead of entire communities.

In rural **Mali**, two types of community organisation can be found, (a) the traditional community organisation which is based on common grounds such as social or professional categories, age, and gender, and (b) the modern organisation (Association Villageoise (AV), Ton and Groupement d'Interet Economique (GIE)) introduced by the public sector or the Ministry of Agriculture.

In the context of decentralisation, it is expected that these associations could form APEX associations of farmer groups in rural areas.

Research by the Plunkett Foundation and NRI identified market linkages as one of the success factors of groups, in particular in the case of commodities with relatively undeveloped markets (i.e. mainly those not covered by the parastatals). Hussain, 1996, P7). The performance of village associations has been poor where the membership includes the majority of villagers and where a multitude of social and economic activities are undertaken. There is a tendency away from large multi-purpose associations towards more specialised, smaller, enterprise groups. In particular, the GIE, which are recognised by the administration take account of this fact.

In Mali the NGO CLUSA is active in promoting village groups. Whereas in the past they had been more directly involved in the setting up of groups, they are now supporting local NGO type bodies who can assist the groups. Important elements for the success of village groups are information, credit/finance, and management capacity. The latter requires training.

In Malawi, it is the NGO ACDI/VOCA which is encouraging the creation of farmer groups and associations in particular in the context of production and marketing of agricultural export crops. Although it is acknowledged that these NGOs are making a very positive contribution to rural development, they generally do not reach more than 1 - 2% of a country's farm households. Given their resource endowment, this raises

questions about the scale of the task of forming an efficient farmer co-operative sector covering the majority of producers.

Research and Extension

A production bias is one of the key features of agricultural extension services in many countries. This is not different in Uganda, Malawi, and Mali. In the past, agricultural trading was controlled by marketing boards and co-operative associations, however following liberalisation, farmers rely more on their own judgement in commercial decision making. Unfortunately this is not reflected in the current state of agricultural extension, whose staff are primarily trained in production aspects.

In order to increase farmers' commercial and business skills they need more exposure to relevant extension information. In addition, research systems also need to take account of this fact. As a consequence the following steps are suggested:

- Post-harvest and commercial aspects of agriculture need to be given a higher priority in national research organisations,
- Extension officers' training requires more emphasis on commercial aspects of agriculture. As a consequence training institutions ought to change their curriculae correspondingly,
- Appropriate extension material has to be developed. It should be adapted to local farming systems and it may well be in vernacular languages. For example, the Uganda National Farmers Union have already made steps in the right direction. However there remain some constraints, for example the bulk of the material is in English whereas the majority of farmers in remote areas are illiterate and primarily speak vernacular languages.
- Different media should be used, and this may well require some research in itself to identify to what extent the current extension communication system requires up-dating.

Newer approaches to extension should be tried out in remote areas. For example, aside from more use of the radio as a means of communication, networking and exchange programmes between communities on a national and international basis ought to be considered.

In Uganda, a task force was set up to prepare guidelines on how NGO activities should be integrated into district agricultural programmes. The creation of unsustainable services in parallel to Government structures should be avoided as much as possible. In particular, at the lower levels of decentralised government, there is a great need for capacity and institution building. As such, these organisations have an important role to play in improving the effectiveness and efficiency of local institutions including agricultural extension services.

Credit

Importance of credit:

- Required to purchase inputs
- Allows farmers more flexibility as to the timing of sales
- Required by traders to be able to engage in inter- and intra-seasonal storage of larger quantities of grains and other agricultural commodities.

Given that DFID have funded a number of projects on these issues, we do not want to go into detail but highlight some of the references, namely,

Gordon and Goodland (1999) on input credit schemes by private companies.

Coulter and Shepherd (1995) on inventory credit and private warehouse receipts.

Poulton et al (1997) on interlocking transactions in agricultural markets.

Capacity Building

As already highlighted, not surprisingly, the emergence of a private trading sector is fraught with more difficulties in countries where the state played a stronger role in agricultural marketing. As a consequence, measures are required to improve the capacity of the agricultural trading sector. Measures to be taken include, amongst others, training, strengthening of Chambers of Commerce, and the formation of traders and processors associations.

Bibliography:

- ANONYMOUS** (1997). Pilot Integrated Rural Transport and Project. Phase I. MLW89/008 and Phase II (MLW/93/003. Terminal Report, Ministry of Local Government and Sports, Government of Malawi.
- AKIDI P., KAIRA C., KWAMUSI P., OKURE M. AND SERUWO L. (1997)**, Agricultural Rural Transport and Development – Uganda. Country paper presented at an East Africa Regional Project Planning Workshop (2 – 8 November, 1997) in Thika/Kenya, as part of Agricultural Rural Transport Research Project, sponsored by DFID.
- BARWELL, I.** (1996), Transport and the Village, World Bank Discussion Paper No 344, Africa Region Series, The World Bank, Washington D.C.
- BAY-PETERSEN J.** (1996), Equity for the Information Poor: Marketing Information for Asian Farmers in Remote Areas. Quarterly Bulletin of the International Association of Agricultural Information Specialists. Vol. XLI No1.
- BARWELL I** (1996), Discussion Paper n0. 344, found on World Bank web-site January 1999).
- BRAUN, J. VON** (1993) *Labour intensive public works: addressing the food security and rural infrastructure problems simultaneously*, in THIMM, H-U. & HAHN, H. (eds.) Regional food security and rural infrastructure (Volume 1): International Symposium Giessen-Rauischholzhausen May 3-6 1993. Schriften des Zentrums für Regionale Entwicklungsforschung der Justus Liebig Universität Giessen 1993 No. 50.
- CARNEY D.** (1998). Implementing the Sustainable Rural Livelihoods Approach, in: Carney D (ed) Sustainable Rural Livelihoods – What contribution can we make, Natural Resources Advisers' Conference, DFID
- COULTER J. and SHEPHERD A.W. (1995)**, Inventory Credit – An approach to developing agricultural markets; FAO Agricultural Services Bulletin 120, Rome.
- COULTER J. and TYLER (1993)**, Liberalisation of Cereals Marketing in Sub-Saharan Africa: Implementation Issues, Report no 4, Mali – Case Study, Natural Resources Institute, Chatham Maritime [unpublished].
- COULTER, J.** (1994) *Liberalisation of cereals marketing in sub-Saharan Africa: Lessons from experience*. Marketing Series 9 Natural Resources Institute: Chatham, UK
- CONYERS, D., and KAUL, M.** (1990) Strategic issues in development management: learning from successful experience. in *Public Administration and Development: an international journal of training research and practice* vol. 10: 3

DORWARD A. (1997) Modelling Smallholder Farming in Northern Malawi: An investigation of methodological, theoretical and policy issues, ADU Working Paper, Wye College, University of London.

DORWARD, A., KYDD, J. & POULTON, C. (eds.) (1998) *Smallholder cash crop production under market liberalisation: A New Institutional Economics perspective.* CAB International

ELLIS S.D. (1997), Key Issues in Rural Transport in Developing Countries, TRL Report 260, Transport Research Laboratory, Crowthorne, UK.

GALTIER, F. and EGG, J. (1998), From Price Reporting Systems to Variable Geometry Oriented Market Information Services, Paper presented to the 57th EAAE Seminar "Agricultural markets beyond liberalisation", Wageningen, The Netherlands, September 23 – 26, 1998.

GOLDMAN I. (1998), Decentralisation and Sustainable Rural Livelihoods, in: Carney D (ed) Sustainable Rural Livelihoods – What contribution can we make, Natural Resources Advisers' Conference, DFID

GOODLAND A., ONUMAH G. and AMADI J., WITH GRIFFITH G (1999) Rural Finance. Policy Series 1. Chatham, UK: Natural Resources Institute.

GOODLAND A. and KLEIH U. (1998), Community Access to Marketing Opportunities – A Literature Review, Draft, Natural Resources Institute [unpublished working document]

GOODLAND A. and GORDON A (1999), Credit Provision for small-holder farmers: lessons from Uganda and Zimbabwe. Natural Resources Institute.

GORDON A. and GOODLAND A. (1999), Production credit by small-holders growing cotton, in: The use of purchased inputs by small-holders in Uganda, Proceedings of a workshop held at Mukono, Uganda, 4 – 5 February 1999

IT TRANSPORT (1996) Promoting Intermediate Means of Transport. SSATP Working Paper. The World Bank: Washington.

JAFFEE, S. and MORTON, J. (eds) (1995) *Marketing Africa's High Value Foods: comparative experiences of an emergent private sector.* Kendall/Hunt, Iowa.

GRIFFITH, G., KINDNESS, H. & GOODLAND, A. *Poverty and the Renewable Natural Resources sector: Institutional Development.* Natural Resources Institute: forthcoming.

HINE, J. (1993) *Transport and marketing priorities to improve food security in Ghana and the rest of Africa.* in THIMM, H-U. & HAHN, H. (eds.) Regional food security and rural infrastructure (Volume 1): International Symposium Giessen-Rauischholzhausen May 3-6 1993. Schriften des Zentrums für Regionale Entwicklungsforschung der Justus Liebig Universität Giessen 1993 No. 50.

HINE, J.L., NELSON, V., AND GREENING, P.A.K. (1998), A project to improve feeder and community access roads in Southern Province: An Initial Assessment, Draft report based on visit to Zambia 27/10 – 6/11/1998.

HUMPHREYS C.P. (1986) Cereals Policy reform in Mali. Elliot Berg Associates, Alexandria, Virginia.-

HUSSAIN A., LUCEY T., STRINGFELLOW R. (1996), The Provision of Agricultural Services Through Self-help in Sub-Saharan Africa: Francophone West Africa Case Study, Natural Resources Institute and Plunkett Foundation.

KINDNESS H. (1998), Marketing Strategy for CARE's 'Development through Conservation Project', Consultancy commissioned by CARE International in Uganda, Natural Resources Institute [unpublished].

LLOYD MORGAN K. AND MUKAREBE J. (1998), Kenya: experience with rural radio – How audience research and imaginative programming have enabled radio to reach women farmers, in: The Rural Extension Bulletin June 1998, The University of Reading.

MARSLAND N. AND GOLOB P. (1996) Rapid Rural Appraisal of Post-Maturity Issues in the Central Region of Malawi, Research project report, Natural resources Institute [unpublished]

MITTENDORF H.J. (1993) Organization of viable agricultural marketing and rural financial systems with particular reference to least developed countries; in THIMM, H.-U. & HAHN, H. (eds.) Regional food security and rural infrastructure: International Symposium Giessen-Rauischholzhausen May 3-6 1993. Schriften des Zentrums für Regionale Entwicklungsforschung der Justus Liebig Universität Giessen 1993.

MUSA B. (no date), Decentralisation in Uganda: Another leap in the dark.

MYERS M. (1998), Mali: 'it's on the radio – so it must be true' – Using radio to promote reforestation, in: The Rural Extension Bulletin June 1998, The University of Reading.

PORTER, G. The impact of road construction on women's trade in rural Nigeria. *Journal of Transport Geography* Vol 3 No. 1 pp. 1-14

POULTON C., DORWARD A., KYDD J. (1997), Interlocking transactions: market alternatives for RNR services? Final research project report, Wye College, University of London.

RISOPOULOS J., RAMATU AL-HASSAN, CLARK S., DORWARD A., POULTON C., AND WILKIN K. (no date), Improving smallholder access to maize marketing opportunities in southern Africa: A literature review, Wye College, University of London [unpublished]

ROBBINS P. (1998), Review of market information systems in Botswana, Ethiopia, Ghana and Zimbabwe, Study commissioned for the Technical Centre for Agricultural and Rural Co-operation (CTA), London.

SANOGO O. (1998), Etude sur l'identification des besoins d'information (Producteurs, Eleveurs, et Pecheurs), Ministere du Développement Rural et de l'Eau, République du Mali.

SHEPHERD, A. (1997) *Market Information Services: Theory and Practice*. FAO, Rome

SIEBER N (1997), Economics of Appropriate Agricultural Transport – A broader approach towards on-farm and market transport; Paper presented at an East Africa Regional Project Planning Workshop (2 – 8 November, 1997) in Thika/Kenya, as part of Agricultural Rural Transport Research Project, sponsored by DFID.

STARKEY P., MWENYA E. AND STARES J. (eds) (1994), Improving Animal Traction Technology, Animal Traction Network for Eastern and Southern Africa, CTA and GTZ.

STRINGFELLOW, R., COULTER, J., LUCEY, T., MCKONE and ANEREENE, H. (1997). Improving the Access Of Smallholders To Agricultural Services In Sub Saharan Africa. Small Enterprise Development, Vol 8. No. 3. pp 35 - 41. IT publications, UK.

SOCETEC (1998), Strategie nationale de développement des transports en milieu rural, Consultancy report, Bamako.

SPORE (June 1997), Market Information Systems: empowering the private sector, Spore No 69, CTA, Netherlands.

SULTAN, J. (1998), Rural radio stations – Listening to the people of the countryside; in: *the Courier* no 170, Brussels.

TIMBO G. (1998), Etude sur l'identification des besoins d'information sur les marchés agricoles – Rapport de synthese, APCAM – PASIDMA, Bamako, Mali.

WORLD BANK (1994) *World Development Report 1994: Infrastructure for Development*. World Bank: Washington.