



**Community Access to
Marketing Opportunities:
Options for Remote Areas**

Mali Case Study

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LIST OF ACRONYMS

ACDI	Canadian International Development Agency
AV	Association Villagoise / Village Association
ADMARC	Agricultural Development and Marketing Corporation, Malawi
APCAM	Assemblée Permanente des Chambres d'Agriculture du Mali
BNDA	Banque Nationale de Développement Agricole
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
CIP	International Potato Centre
CMDT	Compagnie Malienne pour le Développement des Textiles
CTA	Technical Centre for Agricultural and Rural Cooperation
DDC	District Development Committees, Malawi
DFID	Department for International Development
EU	European Union
GDP	Gross Domestic Product
GIE	Groupement d'Interet Economique
GTZ	German Agency for Technical Co-operation
FCFA	Franc de la Communauté Financière Africaine

IER	Institut d'Economie Rurale
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
IMT	Intermediate Means of Transport
ITDG	Intermediate Technology Development Group
KBC	Kenyan Broadcasting Corporation
LG	Local Government
LGB	Larger Grain Borer
LC	Local Council
MDRE	Ministère du Développement Rural et de l'Eau
MIS	Market Information Services
MTPT	Ministère des Travaux Publics et des Transports
NGO	Non-Governmental Organisation
NRA	National Road Authority
NRI	Natural Resources Institute
ODR	Opération de Développement Rural
OHVN	Office Haute Vallée du Niger
OMA	Observatoire des Marchés Agricoles
ON	Office du Niger
OPAM	Offices des Produits Agricoles du Mali
ORS	Opération Riz Ségou
PFDVS	Projet Fonds de Développement Villageois de Ségou
PRMC	Programme de Restructuration des Marchés Céréaliers du Mali
RNRKS	Renewable Natural Resources Knowledge Strategy, DFID
SRL	Sustainable Rural Livelihoods
SYCOV	Syndicat des Producteurs de Cotton et Vivriers
UNDP	United Nations Development Programme
USAID	United States Agency for International Development

EXCHANGE RATES
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£1 = FCFA 930
US\$1 = FCFA 580

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EXECUTIVE SUMMARY

This report was produced as part of a research project funded by DFID's Crop Post-Harvest Research Programme between April 1998 and March 1999. The project was mainly concerned with policy and institutional aspects concerning market access in remote areas. Fieldwork took place in Mali, Malawi and Uganda. It was concluded that holistic approaches are required to improve community access to marketing opportunities in remote areas of Sub-Saharan Africa, but that initiatives needed to be prioritised. The following areas have been identified as key to market access:

- Enabling environment
- Reduction of transport costs
- Improved information provision, and
- Community organisation and market linkages.

Overall, the results of economic liberalization have been positive in Mali, leading to improved marketing opportunities for farmers and other players of the agricultural marketing chain on domestic and regional markets. Investors require a minimum of security in order to commit themselves in remoter parts of the country. This entails political stability and legal protection for contractual arrangements. Decentralisation offers a chance for hitherto disadvantaged parts of the country, however planning and implementation capacity, funding, accountability and community participation need to be improved at local government level.

Both, poor roads and inadequate means of transportation were identified as key constraints to market access and sources of high transport costs in remote areas. These issues are starting to be addressed in the Rural Transport Programme. Whereas in the past emphasis has been on the primary road network, more attention should now be paid to feeder and community roads. Participatory approaches should be encouraged to ensure that roads reflect community needs. In particular, in a vast country like Mali, spot improvements are likely to be more beneficial in remote areas than extensive construction and maintenance works.

Parts of the country already benefit from widespread use of Intermediary Means of Transportation (IMTs) such as donkey drawn carts. However, IMTs also need to be promoted in regions and areas where they are less in use. Water transport should not be neglected given the importance of the rivers Niger and Senegal in Mali's economic life. Regulatory barriers, such as high taxes on vehicle ownership or movement of goods should be avoided. In particular, following decentralization it is important that cash strapped local authorities do not introduce taxes that could lead to significant extra marketing costs.

Lack of information is another characteristic of remote areas. Mali has recently revamped its Market Information System into the OMA (Observatoire des Marchés Agricoles), which is based on a more decentralised approach, also reflected in an increased role of APCAM (Assemblée Permanente des Chambres d'Agriculture). The new system tries to be more responsive to the information needs of farmers, traders, and processors. However, given the extent of information required by these private sector operators, there is a danger that the new system may even become

bulkier than the previous one. A flexible approach avoiding centralisation of tasks as much as possible is required.

Rural Radio is well established in Mali, and should be used as a major means of communication in remote areas. Not only the OMA but also extension services should make maximum use of FM radio stations. It is important to recognise that information is predominantly a public good in a country like Mali, and as a consequence, Government, donors, and NGOs should make adequate funds available for its production and dissemination.

Farmers should be encouraged to organise themselves into groups so as to reduce their constraints to market access, while taking care to avoid past mistakes in co-operative building. The relative success of farmers' group approaches in Mali appears to have its origin in two main factors. Firstly, Mali has a tradition of community organisation. Secondly, during the last two decades the Government promoted farmer co-operation not mainly for ideological but for socio-economic and technical reasons in order to, amongst other things, reduce costs for parastatals such as CMDT. Nevertheless, capacity building projects are still required to consolidate groups in areas which have benefited in the past, and encourage the approach in areas where it is less well established.

A functioning rural finance system is a necessary condition for an efficient agricultural marketing system. Agricultural research and extension services tend to be biased towards technical and production aspects but, due to market liberalisation, need to focus more on commercial and post-harvest issues.

INTRODUCTION

Background to the project

This research project was funded by DFID's Crop Post-Harvest Research Programme (part of RNRKS¹), and 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).

Given that two other market access projects funded by DFID and carried out by the University of Durham and Wye College/University of London were focussing on micro- and meso-levels, this project had its emphasis on policy and institutional aspects using the macro-level as an entry point. The project was funded between April 1998 and March 1999.

The project had the following research objectives:

- Policy recommendations to improve community access to marketing opportunities in remote areas
- Identification of sustainable institutional solutions²
- Contribution to poverty alleviation in rural areas

Justification of the Research

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 ADMARC withdrew its services faced difficulties in purchasing inputs and food, and selling produce (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. In the light of these and other country specific experiences, a workshop on research priorities, organised by DFID's Crops Post-Harvest Research Programme in 1997, identified market access as a priority for further research.

Activities

During the first phase of the project a literature search has been undertaken, which was followed by the development of a conceptual framework. Fieldwork was then carried out in Malawi, Mali, and Uganda. A two-week field survey was carried out in Mali in January 1999, mainly involving discussions with key informants in Bamako and Ségou, and collection of secondary literature.

¹ Renewable Natural Resources Knowledge Strategy

² Here, institutions refer to organisations belonging to the formal and informal private sector, public sector, NGOs, and donor community, with emphasis on their responsibilities in the light of decentralization.

Mali Country Background

Mali is a landlocked country spanning several agro-climatic zones, between the cotton-producing south and the desert in the north. Agriculture is mainly rainfed, but irrigated and flood-plain agriculture are practised at certain points along the Niger valley (Coulter and Tyler, 1993, Page 1).

The agricultural sector is dominant in Mali's economy. In 1997 GDP was estimated to comprise: 49% agriculture, forestry, fisheries; 3% mining; 4% textiles and food industry; 3% other manufacturing; 7% water, electricity and construction; and 34% services (Gordon 1997, page 5, based on DNSI, 1997). With approximately three quarters of the population living in rural areas, agriculture is the main source of employment for most of the population. Exports are dominated by agriculture with cotton exports accounting for 58% of (recorded) foreign exchange earnings in 1996, live animals 13 %³, and other agricultural or food exports a further 6% (DNSI data). Gold and minerals are also important exports.

**Table 1: Production Volumes of Major Agricultural Products in Mali
1990 - 1997 (tonnes)**

	1990	1991	1992	1993	1994	1995	1996	1997
Millet	757,614	663,306	800,906	524,067	637,256	807,833	635,999	688,807
Sorghum	657,779	478,290	693,039	542,028	699,191	671,596	639,248	513,167
Rice	303,884	254,129	408,914	369,016	384,848	422,214	416,432	527,317
Maize	207,362	180,853	236,234	177,127	260,703	296,693	243,300	228,337
Fonio	37,845	19,591	36,455	18,809	26,762	43,156	37,994	38,446
Beans	16,620	13,598	18,452	13,907	17,089	18,953	16,686	16,884
Seed Cotton	265,414	317,432	313,295	319,728	246,362	293,757	405,907	466,300

Source: Gordon (1997) based on DNSI (1996)

Table 2: Distribution of Different Types of Livestock by Region 1995/96

	Cattle	Sheep	Goat	Donkeys	Horses	Camels	Pigs
Kayes	515,175	229,600	279,990	49,482	16,046		
Koulikoro	717,053	254,845	620,476	62,749	5,171		818
Sikasso	631,022	390,816	342,505	39,482	379		19,343
Segou	461,901	451,144	561,758	78,901	8,438	229	32,349
Mopti	470,264	563,367	704,501	64,151	1,807	982	
Tombouctou	129,568	108,315	192,956	24,906	3,987		
Gao	150,676	312,725	525,207	86,733	1,036	64,233	
Total	3,075,658	2,310,812	3,227,392	406,405	36,864		52,509

Source: Gordon (1997), based on DNSI (1996)

³ The real figure is much higher given the importance of unrecorded exports

METHODOLOGY

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 unfavourable terms for the farmers, leading in turn to:

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

Remote areas: In the context of this report, 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,
- Inadequate and inappropriate means of transportation, and
- Low volumes of produce available for transportation, preventing economies of scale.

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

- lack of communication infrastructure,
- insufficient movement of people, and
- limited sources of information.

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.

Needless to say that the most basic of conditions for market access is the existence of market opportunities for produce potentially coming from remote areas. Owing to factors such as demographic growth, increasing urbanization, increasing purchasing power, and changing consumer preferences, 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.

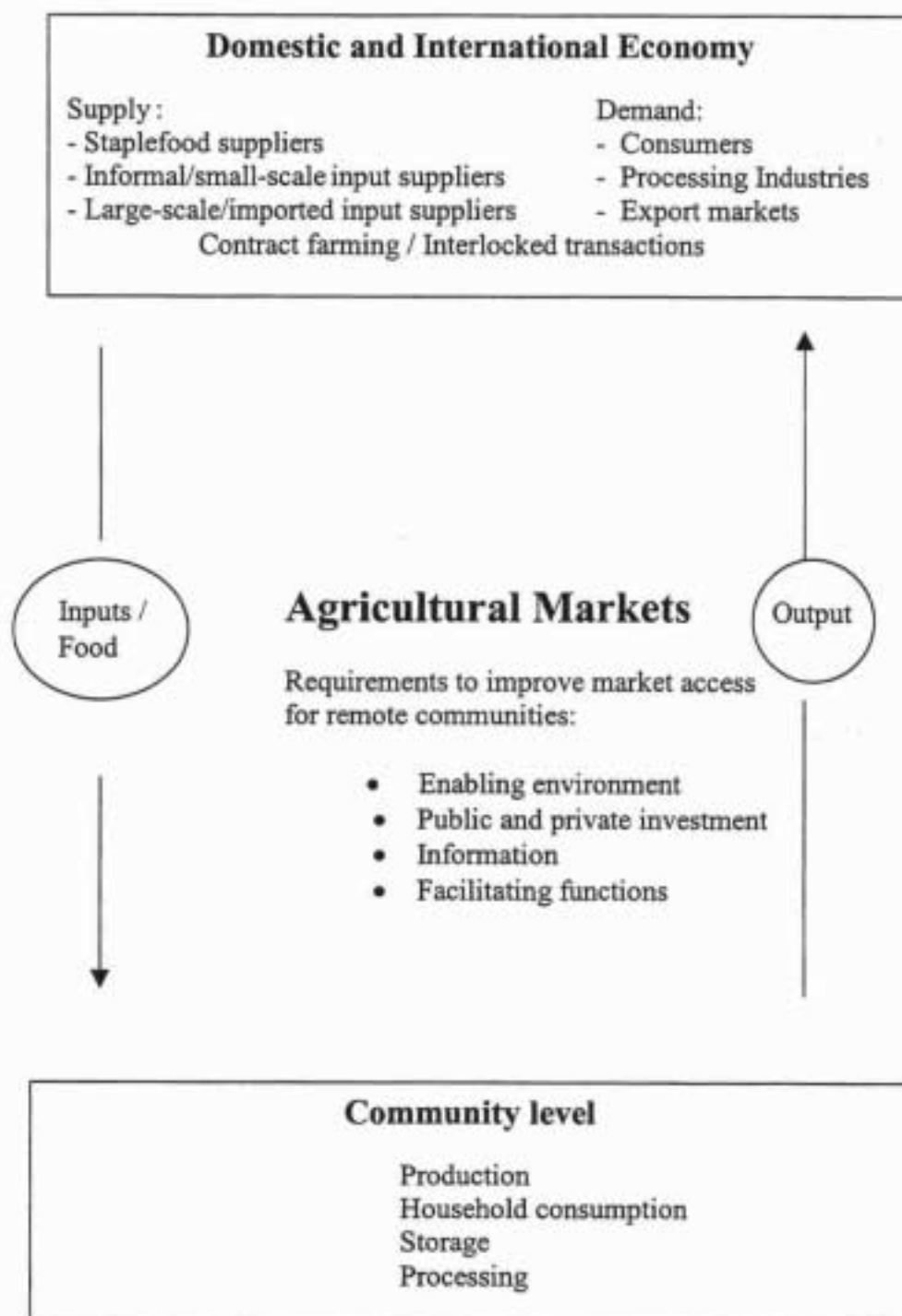
Efforts to reduce marketing margins involve looking at the various elements of marketing costs. As already indicated, it is mostly high transport costs that make a community "remote". Availability and prices of inputs as well as output prices have a bearing on the farming system. The scissors effect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

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. It is therefore required to shed light on the types of information required and means of communication suited for these areas. There is a link between transport and information since increased movement of people tends to improve the flow of information. This can particularly be important for isolated areas where there is no telephone or other communication infrastructure.

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-tradable 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 tradable.

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. At the same time, the efficiency of a marketing system depends on the amount of liquidity available in the system. However, remote areas tend to be characterised by a lack of credit facilities.

Figure 1: Flow of physical agricultural inputs and outputs



Social issues are important in the context of market access. 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.

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 such as cash crops, they usually carry the main burden (i.e. headloading) when no improved means of transportation are available.

Figure 1 illustrates the physical flow of agricultural inputs and outputs, and the requirements that need to be in place to improve community access to marketing opportunities in remote areas. It shows that 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 know 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 contract farming (e.g. 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, currently being pursued by many countries in Sub-Saharan Africa, an integrated, multi-disciplinary approach appears justified. This bears similarities with the Sustainable Rural Livelihoods (SRL) approach which is also based on a holistic framework stressing that the livelihoods primarily depend on five types of asset, namely: human capital, natural capital, physical capital, social capital, and financial capital (Carney, 1998). In addition, the SRL framework, which lends itself to an areas based approach, also stresses the external context, and transforming processes and institutions as an influence on livelihoods.

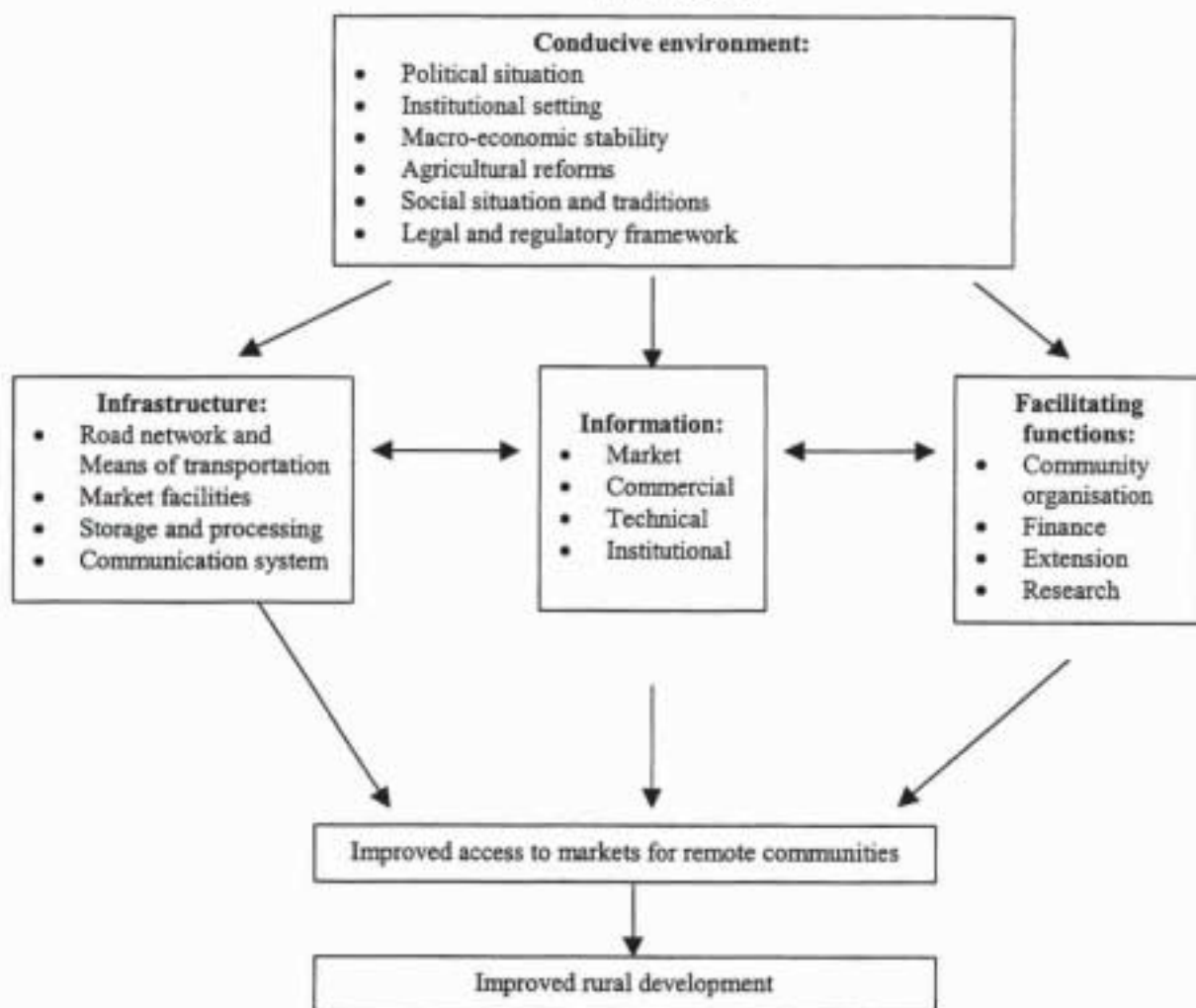
At the same time, it is important to avoid the shortcomings of the Integrated Rural Development (IRD) approach, which was the mainstay of rural development during the 1970s and early 1980s. These shortcomings included:

- 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 by the Government of Mali are key in this context. Figure 2 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 transport infrastructure, means of transportation, information, and the role of community organisation. The other issues will be dealt with but not in detail.

Figure 2: Community Access to Marketing Opportunities: a Framework



IMPORTANCE OF AN ENABLING ENVIRONMENT

Political Environment and Decentralisation

Background

Following the downfall of the Traoré regime in 1991 and the resulting political transition period, Mali has opted for decentralisation in 1993 which led to the Decentralisation Act in 1997 (*Lois et Décrets de la Décentralisation*, February 1997). This needs to be seen in the context of political democratisation in Mali and the population's wish for greater participation in local decision making following the mistakes made by the centrally controlled regime previously in power (MTTP/SOCETEC/H.N'D, 1998).

In part, the armed rebellion prevailing in Northern Mali has been attributed to the shortcomings and deficiencies of the centralised government system, which tended to neglect the development of these regions. In 1996 a peaceful solution involving the population groups concerned has been found.

One of the assumptions of such a system is that territorial units will compete for scarce resources coming from the centre. Aside from resources (i.e. financial, technical, etc) available through the central government, these may also involve those available through donors and NGOs. The Institutional Development Programme, which started in 1996, is the result of these decentralisation efforts.

General issues of decentralisation

Decentralisation is one possibility for improving public good provision, that is transferring responsibility to independent sub-national government. Experience has shown that decentralised infrastructure projects can reduce costs and, as they are more closely tailored to local needs, improve both the effectiveness of the infrastructure and its maintenance. "A review of forty-two developing countries found that, where road maintenance was decentralised, backlogs were lower and the condition of roads was better... But decentralisation was also associated with higher unit costs of maintenance (partially reflecting the higher share of paved roads) and with wider differences in quality across regions (reflecting inter-regional differences in institutional or human capacity)." (World Bank, 1994).

Decentralisation is considered as a means of increasing the effectiveness of the public sector (Goodland and Kleih, 1999). 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, resulting in enhanced local development and a more equitable allocation of resources among districts and groups. Bridging the gap between the central state and local communities is essential. Strong local institutions exist in Africa; for the state to plan and

implement policies it has the choice of co-operating with local institutions or suppressing them (Griffith *et al*, 1999). Decentralisation is important for the state to have a constructive relationship with groups in society.

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. There is a view that only at the centre is there the sufficient quality of staff for decision making. i.e. the quality of governance will decline as a result of decentralisation. Furthermore, decentralisation can often reduce equity as local governments can easily be captured by local elites. Small elite groups based at the local level will be in a better position to influence local officials.

In many cases 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). The following two sub-sections highlight some of the issues related to decentralisation efforts in other parts of Sub-Saharan Africa.

The situation in Malawi and Uganda

The situation in Malawi. According to Hebblethwaite *et al* (1999), the present system of Local Governance is based on:

- (a) Traditional leadership, whereby chiefs are in charge of Traditional Authorities (TAs) and chair Area Development Committees, and village headmen are responsible for co-ordinating Village Development Committees.
- (b) District Commissioners to whom the TAs are responsible, and who are appointed by central government (i.e. Office of the President and Cabinet). Amongst other things, they chair the District Development Committees (DDC). Since 1994, in addition to government officials, the DDC members include local MPs, the chairs of district Party offices, NGO and business representatives and the Traditional Authorities. District Executive Committees are formed by government officials and heads of NGOs working in the district.
- (c) Local Councils were dissolved in 1995 and will be replaced by new Assemblies composed of newly elected Councillors. According to the Local Government Act, three City Assemblies, one Municipal Assembly, eight Town Assemblies, and twenty-six District Assemblies will be set up.

The implementation of decentralisation covers a four year period from January 1999 to December 2002. The success of the decentralisation programme depends on issues such as the financial policies and procedures regarding transfers from the centre to Local Government, the extent to which Assemblies will be in a position to raise

revenue at local level, and the institutional capacity of Local Government including financial management and accountability.

Hebblethwaite et al (1999) identify the following initiatives "for new or additional attention within the Local Governance and Development Management Programme "of the Government of Malawi / UNDP:

- "The need for a focus on governance at village level;
- The need for capacity at the district level in interpretation, adaptation and application of policies;
- The need for attention to technical capacity at district level;
- The need to bolster the capacity of the Assemblies in working with the private sector in promoting economic development;
- The need for support for the Association of District Assemblies".

The situation in Uganda. Uganda is internationally considered a model for the implementation of decentralisation. According to Musa (Decentralisation in Uganda, Another leap in the Dark, 1998), decentralisation was well-received by the population. It is seen as a vehicle for greater participation of the people at the grass-roots. Although it is acknowledged that financial management practice has improved at district level (Musa, 1998), it still seems that a lot more needs to be done in the more remote, newly created, Districts. Aside from improved accountability, the capacity of Local Government (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 LC3 level (i.e. 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 by the LC3 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 Local 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 (e.g. 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, 1998). "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).

Economic Environment

Mali has seen a number of changes positively affecting the rural economy during the 1980s and 1990s. Structural adjustment has started in Mali as early as 1981, and was mainly characterised by:

- General macro-economic reforms (i.e reduction of public expenditure, supply side measures, private sector competition, etc)

- Agricultural sector reforms including:

The creation of the BNDA (Banque Nationale pour le Developpement Agricole (BNDA),

Restructuring Programme of Cereals Markets (PRMC)

Reform of the Offices de Développement Rural (ODR)

Elimination of input subsidies

Privatisation of para-statals (e.g. SMECMA, etc)

State withdrawal in many activities

Market price liberalisation

- Devaluation of the Franc CFA in January 1994.

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, OPAM had a monopoly position until the early 1980s. In reality, however, it never dominated the markets. It is estimated that between 1968 – 1980 only 15% of marketable cereals surplus went through OPAM (Humphreys, 1986, cited in Coulter and Tyler, 1993) 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 parastatals 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). It can be expected that relatively remote parts of the country have also benefited from the high degree of competition in Mali's cereals market and the increased demand.

On the input supply side the picture is less positive. Following the elimination of subsidies and ODRs playing a less prominent role in the distribution of inputs, farmers in remote areas use less fertiliser and chemicals. Increased cost, geographical access, and lack of information are all considered to be contributing factors (IFDC-Afrique et IER, 1998).

The impact of the devaluation of the Franc CFA is widely regarded as positive on rural producers' incomes. A study of the potato sub-sector shows that despite increased input costs, producers' income (per hectare and per work-day) has increased significantly. Income increases of the order of 25% have been reported (Kergna and Dembélé, September 1998). A study of the cattle and beef sub-sector shows that the devaluation had a positive impact on the income of traders, butchers and exporters. The net income of smallholders has increased by 18% (Koné et al 1996). A study of the rice sub-sector states an increased consumption of rice in the country (Sanogo et al 1996).

It has also been observed that the devaluation of 1994 has helped to focus the national agricultural research debate on market issues (Gordon, 1997).

As for the investment climate in Mali, the inflation has been reduced from 32% to about 8% while the objective is to reduce it further to a level of about 4-5%. Needless to say that a conducive economic environment (e.g. low interest rates) at central and local level is a prerequisite for the establishment and growth of agro-industry's, on the demand of which farming communities depend.

Legal and regulatory framework

According to Coulter and Tyler (1993), lending risk is one of the constraints in grain marketing in Mali. "Managing the lending risk is also made difficult by a weak legal framework, where the courts cannot be relied upon in the pursuit of unpaid debts. However the purpose of the pledging system is to cover most of the risk, but even here the system failed to work satisfactorily. The banks did not keep track of market developments and take steps to avoid substantial defaults, for example by seizing the stored grain".

In remote rural communities deals are based on trust. Once this trust is broken people become reluctant to continue business. In addition, inhabitants of remote communities do not trust credit and lending systems and do not have easy access to banks and courts. These difficulties, combined with the lack of good information, prevent remote communities to access market opportunities. Solutions to improve the situation include information by radio or other systems on legal processes, and adequate credit facilities such as *caisses villageoises*.

Social Context

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 organisations (i.e. Association Villagoise (AV), Ton and Groupement d'Interet Economique (GIE)) introduced by the public sector and the Ministry of Rural Development (i.e. ODRs and others).

Traditional organisations have the form of associations which have precise objectives. For example, in many villages there are youth associations which are active in income generating activities and participate in community work. Equally, women associations undertake collective work. Those associations are not formal and do not keep records. Members choose amongst themselves a leader who directs the association.

Formal associations have been put in place by the public sector (e.g. ODRs). In general, these associations are directed by a number of people who are literate. Also, the associations keep records of their activities and are eligible for donor support.

As part of the decentralisation process, these associations could form federated structures in rural communities. Since the organisations can be based at village or community level, decentralisation is expected to enhance remote communities' access to market opportunities.

In most parts of Sub-Saharan Africa, including Mali, **women** play an important role in agriculture. Traditionally, they are particularly involved in the production and processing of food crops, and significantly contribute to the transportation of inputs and outputs around the farm through 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.

INFRASTRUCTURE

Road Network

The benefits of roads

Reduced transport costs are expected to lead to increased agricultural productivity and improved market integration of farming communities. However, it is important to bear in mind that **both** roads and means of transportation are required to meet this condition. This section will concentrate on aspects related to road infrastructure, followed by a section on means of transportation with particular emphasis on so-called Intermediate Means of Transportation.

Based on a case study in the Mopti Region of Mali, BIMAN (1997) have calculated the incremental per capita cash revenue generated due to making an agricultural area accessible to be of the order of 7,389 FCFA (i.e. 14% of Mali's GDP per capita). Increases are particularly high for onion producers (i.e. 27,787 FCFA). In addition, they suggest that overall agricultural production will increase by 43%, with a maximum of 58% in millet producing areas.

Mali's rural road system and the way forward

At the end of the 20th century the road system of Mali comprises about 50,000 kms of roads and tracks, out of which 14,700 km are classified. The network of rural tracks has a length of approximately 33,000 km (MPTa, 1998). The system of major roads consists of 5,705 km of national roads (38% in good condition), and 5,595 km of regional roads (5% in good condition) (MTTP / SOCETEC / H.N'D, 1998). With a road density of about 1 km per 100km², Mali's road network is considered to be among the weakest in Africa.

The fact that the construction and maintenance of the primary road network was given priority during the last decades explains to some extent the poor shape of the rural road network. This was exacerbated by the absence of a strategy to develop rural infrastructure. This section will primarily deal with rural tracks, related to connecting isolated rural communities to the agricultural marketing system.

Workshops and studies conducted in Mali within the context of the National Strategy for Rural Transport Development, have identified a number of technical and institutional constraints including the following:

- Several Government Departments are concerned with rural roads/tracks, however there is a lack of co-ordination and clear definition of responsibilities;
- The exact extent and requirements of the rural road network are not known; and
- Lack of a maintenance strategy for rural roads, leading to, amongst other things, insufficient participation of rural communities and an inadequate maintenance of rural infrastructure.

Relevant recommendations have been elaborated in view to improving the situation, in particular in light of the imminent implementation of the decentralisation policy. In this context, Local Government (i.e. *communes locales*), will have administrative, technical, and fiscal responsibilities of roads belonging to their area.

In the context of improving access for isolated communities, some 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 is needed. 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.

One of the recommendations made for the CMDT area suggests a greater involvement of the private sector and local communities in road and track maintenance (MTTP / SOCETEC / H.N'D, 1998, Page 16). It is recognised, that besides an inventory of potential operators, this would require an adequate organisation, awareness-building, training, and sufficient means.

Guidelines should be developed for different levels. Whereas design criteria for national and regional roads should be centrally established, village access roads should be planned at community level, taking into account local requirements. Planning to this end should involve the traders and other potential users of the roads/tracks.

Many parts of Mali have a natural accessibility advantage due to flat terrain and lack of rainfall between November and July. For example, during the dry season villages otherwise considered off-road can be fairly easily accessed by vehicles. Under these conditions, spot improvements seem to be more beneficial than expensive constructions.

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 required. Prioritisation by local councils is important but this has to take place within the priorities of a region. As compared to other rural infrastructures, where less local co-ordination is needed, roads and tracks linking up several villages need more planning at a higher level.

In particular in vast countries such as Mali, where population density is low, it is important to identify inexpensive approaches. Local participation in the identification

of transport infrastructure has been found to lead to lower cost, lower technology solutions.

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".

Based on a brief survey in Zambia, Hine *et al* (1998) provides some indicative guidelines on the road categories justified as a function of traffic volume:

- 100 vehicles per day (vpd): two laned gravel surfaced road and frequent grading;
- 50 vehicles per day (vpd): grading several times a year justified;
- 20 – 50 vpd: there is still the case for some road maintenance, although it is usually unjustified to build and maintain a gravel surface;
- If traffic levels are below 20 vpd or less then it is not justified to build a two lane road; a single lane road with passing places is far more appropriate.

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, Page 8.).

Private sector involvement should be increased. The example in Box 1 shows the experience of CARE Zambia, based on their involvement in providing training and advise for small-scale contractors who can carry out construction, and maintenance work at local level.

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). 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).

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 decentralised government authorities.

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 1994, Page 78). This can be the case for village access

roads. Trunk roads and feeder roads, which serve a wider public, require contractual arrangements with paid labour.

At the same time, it is important to bear in mind that it is not always the poor who benefit from new roads. Although transport may come in, they may not be able to afford it. Also, roads are not always the population's top priority, and owners of carts may lose out if trucks come in. The better-off categories in the community (those with better access to production factors), may benefit more.

There is the issue of barriers to close roads after rainfall in order to avoid damage. Although similar arrangements are often abused by the services supposed to enforce them, problems with corruption should be easier to handle following decentralisation. In this context, the awareness of the population and local government services needs to be raised.

Box 1: Road rehabilitation project executed by CARE Zambia

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 (NGO) implemented an IFAD funded US\$2.6 million three year programme to rehabilitate 150km of feeder roads in Southern Zambia using labour intensive techniques. The principles used in the project included labour intensive techniques and community participation both in planning and construction. This helped in identifying road location and building a sense of local ownership.

Local criteria for the prioritisation of feeder roads for rehabilitation included the following:

- Access to large populated areas,
- Access to social facilities such as schools,
- Access to inputs and produce at depots and to hammer mills,
- Access to other feeder roads, and access over streams and river points.
- Access to clinics, agriculture, and fishing camps, and the police were also included."

The NGO 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 at \$3000 per km, including the costs of water crossings (simple culvert \$700, drift \$400 – 700). CARE Zambia has now increased the use of private contractors to provide training and advice for small-scale contractors who carry out construction and maintenance work at the local level.

Source: Hine, *et al* 1998

To sum up, some main points to consider in the context of remote rural communities:

- Given the donor commitment to improve the rural road network, it is first and foremost government co-ordination that is required. The World Bank initiated Rural Travel and Transport initiative should be given priority.
- Guidelines are required for road construction and maintenance at community level, which encourage community participation. These guidelines should be flexible enough for implementation at village level. As far as possible, general guidelines already prepared by World Bank initiatives, other donors, and NGOs should be adapted to local requirements;
- Avoidance of excessive roads width; Criteria should reflect villagers' needs based on current and potential traffic volume; Spot improvements may be more beneficial than extensive road construction and maintenance works;
- Labour intensive construction technologies should be encouraged; bearing in mind that this is likely to lead to increased management and supervision costs. Adequate arrangements have to be put in place for maintenance if labour-intensive construction techniques are used as part of a "safety-net" programme.
- Encouragement of self-help initiatives at the lowest level, especially 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 at Local Government and community level is required in this respect.
- It ought to be recognised that villagers need outside support, especially where the terrain is more difficult (hilly, water streams, etc.) or where distances are too long; Private 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, private companies are unlikely to be more efficient and effective than the public sector.
- In the short-term, NGOs and donors 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 wider network.

Means of Transportation

Better roads may not always guarantee better availability of transport services. The key to reduced transport costs is how the roads are used.

“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 n0. 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). According to Dawson and Barwell (1993, quoted in Ellis, 1997), women have been reported of taking up to 85% of total transport effort in terms of tonne-kilometre.

Headloading, in particular by women, is a common feature of rural transport in remote areas. This includes transport of produce from the field to the farm, and from there to markets. However, given the limited quantities which can be transported, the speed involved and the maximum distances to be covered, headloading is one of the most expensive means of transportation. At the other end of the spectrum, motorised transport (e.g. 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. For example, Sieber (1997) argues that the shift from headload to donkey cart can reduce the transport costs by 60%, and the shift to an ox-cart by nearly 90%.

Sieber (ibid) runs different scenarios for transport systems to connect villages to a market centre. Highest transport costs occur when trucks or pick-ups visit all villages to collect produce. The best cost efficiency is achieved when a combination of animal traction is used with truck transport. Ox carts can transport loads on poor roads to collection points, whilst trucks carry bigger, aggregated, loads to the marketing centres. Sieber (ibid) backs this up with empirical evidence from Tanzania, where marketing revenue is substantially higher for households owning donkeys.

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).

Table 3 provides an overview of intermediate means of transportation, and their key characteristics. Table 4 describes the availability of IMTs in Mali.

Table 3: Performance of Intermediate Means of Transportation

Mode	Max load (kg)	Max speed (km)	Max range (km)	Topography Required
Wheelbarrow	100	5	10	Flat narrow path
Bicycle	75	20	20	Flat narrow path
Bicycle and trailer	200	10-15	15-20	Flat wide track
Bicycle and slider	150	10-15	15-20	Flat wide track
Pack animals	100-250	5	15-20	Hilly, narrow path
Animal-drawn sledge	200-400	5	10	Flat
Animal drawn cart	500-1500	5	15-20	Flat wide track
Motorcycle	100	40-90	100	Motorable path
Motorcycle and side-car	250-500	30-60	60	Flat
Motorcycle and trailer	250	30-60	60	Flat
Single-axle tractor and trailer	1500	15-20	40	Flat
Asian utility vehicle	1000	60	60	Motorable road / track

Source: Riverson and Carapetis, 1991, quoted in Gebresenbet *et al* 1997.

Table 4: Situation of Intermediate 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: MTTP / SOCETEC / H.N'D, 1998; based on Ministère de l'Administration Territoriale et de la Sécurité. Recensement administratif 1996.

The total number of vehicles suggest that Mali is quite well endowed with IMTs. For example, the total of about 150,000 carts indicates that approximately 10% of the country's farm households own a cart. Although only a minority of farmers owns carts, this percentage would mean that the majority of them could use carts at least on a hired basis.

The majority of carts used is drawn by donkeys. In fact, for cost reasons, even owners of oxen often prefer to use donkeys and donkey carts for transport. In that

respect, the country benefits from its large population of donkeys, which was 400,000 in 1995/96. (Gordon, 1997, based on DNSI, 1996))

At the same time, these means of transportation are not evenly distributed. Backed through relevant programmes or agricultural support services (i.e. credit provision), they are particularly prevalent in CMDT and ODR areas. On the other hand, farmers in the more isolated parts of the country still lack adequate means of transportation.

A workshop to elaborate a national rural transport development strategy has been organised in 1998 (MTTP, 1998). Here no attempt will be made to repeat all the conclusions and recommendations, however a few key points will be highlighted which seem relevant in the context of appropriate transport in remote rural areas:

- The government 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 is a pre-condition for the up-take of transportation systems.
- Due to socio-cultural constraints, awareness building amongst the rural population is necessary. This should make certain means of transportation more acceptable to women.
- 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).
- It is important to spread the use of IMTs from the CMDT and ODR areas to the isolated parts of the country.
- Adequate training, credit facilities and incentives for blacksmiths are necessary to stimulate the creation of workshops in remote areas.

Market Infrastructure

The presence of markets tends to be skewed to the main towns whilst rural areas, in particular those outside the areas of ODRs, often do not have adequate infrastructure and depend on informal road side markets. It was felt that community markets only require a minimum of investment. In the case of some donor projects which were poorly designed without taking account of the needs of rural communities, expensive market infrastructure was either under-utilised or not used at all. 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." Private operators of markets are unlikely to make necessary investment. Therefore, 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.

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

- Markets should be located at central points to reduce distances for producers and traders,
- Markets need a minimum of infrastructure to be provided by Local Government, 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.
- Following an initial, moderate, investment by the local authorities, the management of the markets should be tendered out to private operators.

Storage and 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 endeavour in processing activities (e.g. drying of fruits and vegetables, smoking of meat). With respect to marketing, processing 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.

(also see Section on Community Organisation and Market Linkages)

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.

Table 5, prepared by Dr P Golob, NRI, provides some guidance on the extent of agricultural storage losses. The table in general demonstrates that considerable losses occur during grain storage at farm level particularly when storage periods are extended over several months.

Table 5: Weight losses in local grains and pulses during storage on small farms in Africa

Country	Crop	Storage period (months)	Cause of loss	Mean % weight loss (\pm SEM) or range	Reference
Zambia	maize	7	Insects	1.7-5.6	Adams, 1977
Kenya	maize	Up to 9	insects, rodents	3.5 \pm 0.2	De Lima, 1979
Malawi, Lilongwe	maize	Up to 9	Insects	3.2 \pm 3.4	Golob, 1981
Malawi, Lower Shire	maize	Up to 9	Insects	1.8 \pm 3.5	Golob, 1981
Malawi, Lower Shire	sorghum	Up to 9	Insects	1.7 \pm 0.5	Golob, 1981
Tanzania**	maize	3-6.5	insects (LGB)	8.7	Hodges <i>et al.</i> , 1983
Swaziland	maize	Unspecified	Insects	3.7	De Lima, 1982
Swaziland	maize	Unspecified	Moulds	0.5	De Lima, 1982
Swaziland	maize	Unspecified	Rodents	0.2	De Lima, 1982
Ethiopia!	sorghum	9	Insects	4.0-9.2	Lemessa and Handreck, 1995
Togo	maize	4-6	insects	5.1-6.4	Pantenius, 1988
Togo*	maize	6-8	insects (LGB)	30.2-44.8	Pantenius, 1988
Tanzania*	maize	4	insects (LGB)	17	Keil, 1987
Ghana	cowpea	5-9	Insects	1.1-4.7	Golob <i>et al.</i> , 1998
Ghana	barbara	5-9	Insects	1.4-1.6	Golob <i>et al.</i> , 1998

*Data do not take into account food removals during storage, no allowance made for declining quantities.

** Spot estimate on samples collected at one point in time.

! Storage in lined, underground pits which were untouched for the entire storage period

INFORMATION

The Importance of Information

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). Increasing the negotiating strength of farmers as a result of addressing information asymmetries, should allow producers to get higher prices for their produce (assuming a market with sufficient competition). Market information will encourage new market entrants as it enables the identification of income-generating trading activities (Goodland *et al*, 1999).

For information asymmetries to be reduced requires that both parties in the exchange have access to the information. For this reason, market information can be considered a public good, to be provided by the state. However, the state's record in the provision of market information has been poor. "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." (ibid)

Mali's Market Information System (MIS)

In 1989, Mali introduced an agricultural Market Information System which concentrated on the collection, processing and dissemination of information on cereals markets (Sanogo, 1998). However, according to Galtier and Egg (1998), Sanogo (1998), and 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, such as the devaluation of the Franc CFA in 1994. 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. In practice the, regional APCAM offices will collect information, which will be processed and disseminated by the OMA.

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).

The execution of needs assessment studies was one of the first activities of the new "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:

- 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:

- Prices
- Supply and demand situation
- Contact details of traders
- Quality standards
- Regulations
- Market opportunities.

Box 2: Economic Observatory of Senegalese Horticulture

The 'Economic Observatory of Senegalese Horticulture' has been operating in the Dakar market since 1994. Its strategy is very different from that of state-managed systems and consists of organising operators in the marketing chain in order to make it more efficient. The initiative was taken by the Horticultural Department of the Ministry of Agriculture and by scientists of the Agricultural Research Institute (Institut sénégalaise de recherche agricole, ISRA) which was already collecting price data in Dakar. The origin of the system is thus in the state sector, but the private sector was also involved right from the start. Foremost among the latter group was the National Horticulture Association (Conseil national interprofessionnel de l'horticulture, CNIH) which was set up to fight the challenge of other exporting countries, particularly Burkina Faso and Kenya, competing for the European Market. CNIH's membership comes from all levels of the marketing chain, including one association of large and one of small exporters. All parts of the chain from both public and private sectors meet every week to discuss developments.

The Agricultural Research Institute provides information on the market prices, the Customs Service supplies data on imports and exports and the producers talk about the stage of development of their crops and indicate disease problems that might be of interest to the research organisation. The downstream side looks at what it might do if it seems that there is going to be a gap in production and the upstream side can set about trying to respond to the market demand.

Papa Abdoulaye Seck, special adviser to the Director-General of ISRA, has said that 'As President Senghor would have said, the association both gives and takes because once people are together they can talk about their problems and find common ground from which to manage the conflicts that are inevitable in a market chain in which the problems of one section are not necessarily the same as those of another. Discussion leads to mutual understanding and to a consensus from which everyone, including the consumer benefits'.

The effectiveness of the Observatory could be improved still further, particularly as a provider of information by, for example, distributing to the various media the two page minutes of its weekly meeting. This would be cost effective because 'as everyone freely gives of the information that he has there is very little additional expense.'

The Senegalese Horticultural Observatory is lean, participatory and has practically no formal organisational structure. It has, however, benefited from one especially favourable circumstance which Papa Seck considers very important: 'Agricultural policy in our countries since independence has resulted in very little interference in the horticultural sector. When one is not circumscribed and encumbered by directives it is natural to be self-reliant and to grasp the initiative. Horticulture was well to the front when 'liberalisation' and 'disengagement' became the watchwords. This is why private sector initiatives in horticulture have flourished in recent years compared to those in other agricultural sectors that were for long under the yoke of tight government control.'

From 'Harnessing the informal sector' - Spore - No 69 June 1997 (CTA),
In: Robbins, 1998.

In the context of traders it is important to mention government policies regarding for example food imports.

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)
- 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 participatory needs assessment exercise was certainly a step in the right direction. However, it highlights some points, which may potentially conflict with the above objectives.

As for the financial independence, it is difficult to foresee the system working without donor support. The annual operating costs 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 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 previous one. In addition, since the OMA will, to some extent, take over from the previous Market Information System, it is likely to inherit also some of its predecessor’s shortcomings. As a consequence, OMA managers ought to be careful not to repeat the mistakes of the past. A flexible approach emphasising the importance of decentralised data collection and dissemination 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 OMA. 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). At the same time it is important to co-ordinate the activities of OMA with those of other projects and institutions

collecting and disseminating market related information (e.g. URDOC at Office du Niger, OMBVI, and DNSI).

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. The Afrique Verte project has undertaken some actions into this direction.

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. NGO 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 structure should allow a better co-ordination in this respect.

The Use of Local Radio Stations

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 Ségou and a total of 14 in the Ségou 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.

The Italian NGO Terra Nova played an important role in providing associations (i.e. political, cultural, and other) with broadcasting equipment. The population's interest and donor support led the government to subsidise new radio stations from 1992 onwards. In the first years of the scheme the annual subsidy of a larger station was of the order of 2 million FCFA (approx. US\$3,500), and 0.2 million FCFA for smaller stations. Larger stations hope for a subsidy of about 1 million FCFA in 1999.

The more successful stations manage to work on a budget which is much higher (e.g. 10 million FCFA), with funding coming from advertising, association's membership fees, development projects or services wishing to communicate information, etc.

The radio stations are classified into the following categories:

- association/community
- commercial
- religious
- rural

In reality it is often difficult to draw exact lines between these categories, as their programmes tend to cover more than one of them.

The radio stations have their own association called 'Union des Radios et Télé Libres Du Mali' (URTEL). The number of radio stations and the fact that subsidies are declining suggest that competition between the stations will increase and some of them will have to close. In particular, those with insufficient backing and weak management structures are likely to loose out.

Competition is likely to increase the commercial element in broadcasting, requiring stations to take close account of listeners' wishes. For example Radio Foko, the antenna of the cultural association Jamana, have recently changed their programmes and broadcasting formats following consultation with their listeners.

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 8p.m. 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".

In particular, in cases where villagers contribute financially through subscriptions to the running costs of the local station, they have a strong interest that their concerns are addressed and there is adequate coverage (Sultan, 1998). Rural population groups have a strong interest in technical matters related to their daily work and tend to ask for programmes more related to agriculture, livestock and fishing. Mediation between villagers and their external partners, and reinforced solidarity within villages are other beneficial outcomes of rural radio stations.

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.

However, Myers (1998) also highlights the need for increased funding of rural radio. According to her, "the problem is that almost everywhere rural radio is chronically under-funded". She describes the case of one town in Burkina Faso, "where the district government is meant to support a community radio station, the regional administration is so poor that it has had to requisition the radio station's only motorbike to enable it to collect local taxes".

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.

FACILITATING FUNCTIONS

Community Organisation and Market Linkages

Group actions by farmers have 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). Many groups of this kind can be found in Mali. They are called Groupe d'Interet Economique (GIE). With respect to market access, the advantages of group actions are as follows:

- **Cost sharing:** Groups can counter the 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. At the Office du Niger they act together in order to access credit for input, small rice dehullers etc.
- **Provision of public goods:** Groups can internalise certain externalities and therefore allow for the private provision of certain public goods.
- **Risk sharing:** Groups can reduce risk by pooling individuals risk (though this may lead to unwise and over-risky decisions).
- **Lowering transaction costs:** Groups can perform screening roles; and gather and disseminate information about members;
- **Collective bargaining:** co-operatives can exercise or counter market power: collective negotiations; controlling with-holding members supply to the market and so on.
- **Economies of scale:** these can be realised by joint activities, for instance the purchase or marketing of goods.

(Goodland et al, 1999)

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 to 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 (Goodland *et al*, *ibid*). 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 (*ibid*).

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 (also see section on Social Context).

The NGO CLUSA is active in promoting village groups. Whereas in the past they have 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.

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. The Malian Government - through the Chambres d'Agriculture, donor projects, and NGO initiatives - supports private sector operators (i.e. farmers, traders etc.) to organise themselves as GIE. Examples include the Project 'Appui a la Commercialisation des Céréales au Mali', which is funded by ACDI (Agence Canadienne de Développement International) and assisted by UPA (Union des Producteurs Agricoles du Québec) (CDI DE L'UPA - DID, 1998).

Box 3: SYCOV, the Example of a National Level Farmers' Organisation

SYCOV (Syndicat des Producteurs de Cotton et Vivriers), the Malian Union of Cotton and Food Crop Producers, represents an interesting case of a national level farmers' organisation, which saw the light of day following the political transition in 1991. The fact that the Union, despite its name, has originally decided 'to focus on a single commodity ... has facilitated the diffusion of straightforward messages (predominantly relating to price/cost issues) which responds to producers' immediate and concrete interests in respect of cotton'. However, also in view of changes in the agricultural production system, in the longer-term it may be more beneficial for the organisation to adopt an approach, which is closer to the farming system.

One of the challenges SYCOV faces is to find a balance between a 'union' approach and one having the characteristics of a professional association. As a consequence, 'in order to meet the challenges which it may face, SYCOV will need both to enhance its systems of internal communication and to be very systematic in priority setting.' Instead of embarking on a larger scale project such as the establishment of a *central d'achat* and getting involved in input supply, it is argued that SYCOV might benefit more by building its strengths through lower profile activities such as literacy programming. The latter can be expected to increase the Union's leadership pool and facilitate information flows. It is also argued that local or international NGOs might have a useful support role to play in strengthening the organisation.

Source: Bingen et al, 1995

The relative success of farmers' group approaches in Mali appears to have its origin in two main factors. Firstly, as already indicated above, Mali has a tradition of community organisation. Secondly, although the Government and parastatals

promoted farmer co-operation in the form of village associations, in particular since the 1980s this was not primarily done for ideological motives but for socio-economic and technical reasons facilitating a better integration of communities into the wider economy. CMDT played a leading role in this respect (Pers. comm. J Coulter).

Despite numerous failures and the fact that this may have been promoted to reduce costs for parastatals such as CMDT, this appears to have helped to develop a 'culture' of community organisation in the country from which the GIEs are now benefiting. At the same time, the building of a federated national structure of farmer groups, encompassing the majority of producers, remains a challenge. As already indicated, it is hoped that political decentralisation will facilitate this process.

Extension Services

A production bias is one of the key features of agricultural extension services in many countries. This is not different in Mali. In the past cereal trading was controlled by OPAM, however following liberalisation and since the PRMC started to work in the 1980s, farmers rely more on their own judgement in commercial decision making. Unfortunately this is not reflected in the current state of agricultural extension (i.e. *vulgarisation and encadrement*), whose staff is primarily trained in production aspects. Only a limited number of staff are dealing with marketing and post-harvest issues.

However, to increase farmers' commercial and business skills they need more exposure to relevant extension information. As a consequence the following steps are suggested:

- Extension officers' training requires more emphasis on commercial aspects of agriculture. As a consequence training institutions ought to change their curricula correspondingly,
- Appropriate extension material has to be developed. It should be adapted to local farming systems and it may well be in 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 the context of decentralisation efforts, NGO activities should be embedded in local district administration. 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. In Uganda, for example, a task force was set up to prepare

guidelines on how NGO activities should be integrated into district agricultural programmes.

In the past, areas covered by ODRs (i.e. CMDT, ON, OHVN) have benefited most from extension services. In addition, some other areas had or have donor or NGO funded development projects. However, there are still important parts of the country where extension (i.e. *vulgarisation* and *encadrement*) is sparse. These areas often belong to the remoter parts of Mali, with communities lacking access to markets and other basic facilities. It appears important to put more emphasis on these areas in order to integrate them better into the national economy.

Credit

Credit and a functioning financial system have an important role to play in facilitating farmers' access to markets in remote areas (also see Section on Legal and Regulatory Framework). Without going into details, the following highlights some of the research projects recently funded by DFID in the context of credit and the building of linkages in the agricultural marketing sector:

- 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.

APPENDICES

Appendix 1: Contact lists

Appendix 2: Bibliography and Relevant Literature

APPENDIX 1**Contact List - Mali**

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