

Multi-Agency Partnerships in West Africa: MALI

Country Background

Mali emerged from a long period of centralised political and economic control in 1994 and has since made substantial efforts to restructure both its economy and administrative system. Government no longer fixes agricultural prices, and is trying to remedy chronic political instability in the north through decentralising the administration. Nonetheless, as a Sahelian country with limited access to export gateways and a continuing victim of uncertain climate it remains one of the poorest countries in the world. Moreover, a long-term recipient of multi-lateral loans based on projects of uncertain technical validity, it has an external debt which amounts to 132 per cent of GNP.

Government inputs to agriculture in Mali were traditionally based around large cash-cropping projects, notably cotton, through the *Office du Niger*. While these were more effective than corresponding projects elsewhere in West Africa, they discouraged farmer investment in agriculture in the rice-growing areas. Chronic food-shortages remain a problem in Mali and while agencies have proved willing to respond in cases of declared emergency, only an increase in agricultural production, which presently makes up 42 per cent of GNP, would improve food security. This remains one of the most straightforward options in the elimination of poverty (UNDP 1998).

Geographical distribution

Rice production is found virtually throughout Mali, except in the true desert areas. The Niger river and its affluents are the basis of a variety of larger-scale schemes, but also supply the majority of smallholder rice. The Inland Delta, a large seasonally flooded region, located approximately between Ségou and Timbuktu has been a centre of rice cultivation, for thousands of years and is also a major centre for diversity of rice germplasm. However, the various lakes distributed around the subdesertic region as well as valley bottoms throughout southern Mali also encompass small-scale cultivation. For the Delta region, Map V accompanying Quensière et al. (1994) shows the distribution of cultivation systems, including rice-schemes and lakes with flood-retreat cultivation.

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1. Production methods

Overview

Rice production methods in Mali can be divided into four broad types of enterprise. These are:

- a) Traditional
- b) Controlled flooding
- c) Dam-based irrigation
- d) Pump-based small-scale plots

Of these, traditional production is still predominant and may constitute as much as 90% of overall rice production. Its incidence and output, however, remains largely unstudied and little-known away from a few favoured sites in the Delta. Government resources have traditionally been largely directed towards irrigated schemes as have national programmes of input supply and plant breeding and evaluation.

There is a strong dichotomy in the use of Asian as opposed to African rice within these systems. The basis of traditional cultivation remains *O. glaberrima*, which is favoured for its resistance to bird and insect pests and its tolerance of a wide range of climatic conditions. It is also harvested earlier than *O. sativa*, although at a cost of lower yields. However, all the systems based on some type of water-control favour higher-yielding Asian types, originally imported in the 1930s and more recently deriving from IRRI and later WARDA releases.

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a. Traditional

Traditional rice production in Mali can be divided into three main categories:

<i>mares</i>	lakes
<i>bas-fonds</i>	valley-bottoms
<i>Delta flood-rice</i>	

Cultivation on the shores of lakes is common in the semi-arid regions, where there are quite large seasonal water-bodies, such as the lakes Debo, Walado, Korientzé, Faguébine and Korarou. Rice predominates in more southerly sites, although always in a mixture with horticulture, including notably onions and sweet potatoes. Further north, wheat tends to predominate, with cowpeas and other semi-arid subsistence crops. This type of cultivation, known locally as culture de décrue, is essentially a flood-retreat system based on residual moisture similar to those used around Lake Chad.

In Mali, flood-retreat systems have often been the basis of socially rather problematic tenure arrangements. The valuable land around lakes and river affluents is often owned by near-feudal landlords and then leased to farmers on a share-cropping basis. Since the owners contribute virtually nothing to production costs, this exploitative system is only functional because of the relatively high yields in comparison to the surrounding drylands.

Cultivation in the valley bottoms, essentially regions where water congregates in and after the dry season, resembles SE Asian paddy rice, since the seedlings are generally grown in nurseries and transplanted to the seedbeds after some weeks. Land tenure in such sites corresponds more closely to ordinary village tenure systems.

Delta flood-rice is based around the early ploughing and harrowing of the dry soil, using four-ox ploughs, an unusual technical innovation in West Africa. The Niger floods rise very rapidly, and the cultivars have been adapted over time to produce long stems and thus keep the seed-head above the water-level. The rice can then be harvested from canoes, in much the same way as North American wild rice, *Zizania aquatica*.

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b. Controlled flooding

Controlled flooding operations (*submersion contrôlée*) are essentially those of the large schemes based on the Niger at Mopti and Ségou, which are rain-dependent, gravity-fed and are managed through a series of gates. These are known as Opération Riz Mopti and Opération Riz Ségou. These operations date from the early 1970s where they were constructed with a composite of World Bank and Malian Government funds. As with the dam-based systems, the tenant farmers on the scheme were given loans to begin rice-cultivation and now contribute annually to the maintenance of the scheme. Opinions vary as to the effectiveness and productivity of these schemes, but they are at least still functioning, in contrast to similar operations elsewhere in Anglophone West Africa.

c. Dam-based irrigation

The principal dam-based rice system in Mali is the Office du Niger, a very large-scale scheme in Central Mali, based on the Barrage de Markala. This scheme dates from the 1930s and was built by the French colonial authorities using migrant labour from all over Francophone Africa, notably Niger and Burkina Faso. The entire system is gravity-fed and constitutes well over a million hectares. The original purpose of the scheme was the production of cotton for French textile production but it was rapidly determined that yields were low and rice was soon introduced and now predominates.

The original system was one of tenant-farmers and since these were largely migrants rather than being drawn from the local population, this enabled the authorities to exercise strong control. Over time, these migrant households have become integrated with the local communities, and are now considered to hold rights in the land they farm. During Mali's centralist period, the system of tenants paying contributions to the irrigation authority was retained from the colonial era. However, the present push for decentralisation is encouraging the gradual privatisation of all functions. The rice-hulling and sugar-cane processing plants originally owned by the state have now been sold to private entrepreneurs. Increasingly, all input supply is being handed over to the private sector and the communities are being encouraged to group into Associations Villageoises, i.e. community groups, in order to ensure regular collection and payment of water dues.

This process is continuing and an evaluation of its success is premature; the positive side is that input supply had become increasingly ineffective under the central system and inputs are now regularly available, if at higher prices. The downside may be that there will be an increasing trend away from rice towards sugar-cane and other cash-crops; good for individual farmers but bad for national food-security. There is also apparently some sale of plots to larger-scale entrepreneurs, and there is a danger that former tenants with cash-flow crises could end by becoming share-croppers on the land which they once owned. Such trends need to be closely monitored.

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d. Pump-based small-scale systems

All rain-fed and gravity-based systems suffer from the vagaries of climate and Sahelian Africa has been especially subject to variation in annual precipitation since the 1970s. Indeed one of the problems experienced by Opération Riz Mopti and Opération Riz Ségou was that their projections for Niger flood-levels and thus water availability were based on water-heights achieved in the 1950s and 1960s, which have turned out to be something of an exception in this century. Upstream water abstraction in other West African countries, notably Guinea, is unpredictable but the broad effects on Niger flow in the 1980s and 1990s have been little short of disastrous for many communities.

The obvious solution to ensuring regular water-supply on a small scale was the use of bunded fields and pumps. Controlled water makes possible the use of high-yielding paddy strains that would not survive under the more aleatory conditions of natural floods. In oil-boom Nigeria, such pumps have been very successful, based on unrealistically low prices for both the pumps themselves and the fuel. Most Malian peasants have historically been too poor to raise the necessary capital, but the government attempted to remedy this following an NGO initiative in the 1970s. A pumping station with the capacity to irrigate some 4-600 hectares was established at Timbuktu in response to the droughts of the early 1970s. Known as the Îles de Paix, it clearly also had an intended political appeasement message. These stations were intended to work through agricultural co-operatives established by government, so that centralised control was not effectively slackened. Government has established two other such stations, but the idea has hardly caught fire, probably because the unit of management is too large for direct control by potential producers.

Much more successful has been the development of smaller scale pumps irrigating 30-50 hectares. This system is known as périmètres irrigués and is based around the initial supply of an appropriate capacity pump as either a loan or gift. A number of pumps visited were originally a gift of the Fonds Européen de Développement (FED). The villagers, usually grouped in an Association Villageoise, are then entirely responsible for both the labour of maintaining the périmètre irrigué and the pump. This involves both the regular collection of funds for diesel and the maintenance of the pump itself. Innovatively, the maintenance of the pump is carried out by garages in Mopti and Kona under contract to individual villages. One of the roles of local NGOs has been to create an association of recommended garages with the skills and access to parts to service the pumps effectively.

These smaller pump systems have been extraordinarily successful, both in the persistence of established schemes and in their spread to new areas. No estimates are available as to numbers, but they are now found all the way up to Timbuktu and along the river towards Gao. Moreover, newer schemes are the results of private investment by villages without any external help from Government or NGOs. For once, therefore, the technical problems seem to be largely solved and the role of NGOs

is thus transforming and concentrating more on building on community organisation, improving access to inputs and account-keeping.

Pump systems have also acted to provide additional income for women. Apart from the rice, which is largely controlled financially by men, women have also created jardins de maraîchers, small horticultural gardens fed from the same system as the main rice fields. The product of these is probably only useful as a cash-crop where a village has access to the road-system but there is a considerable benefit in terms of improved nutrition.

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2. Institutional background

Two rather striking conclusions emerge from the narrative of Malian rice systems in contrast to Ghana and Nigeria; the persistence of large schemes and the success of pump-based schemes. In Nigeria, at least, it is the small-scale village systems that are showing the capacity to innovate.

In the case of the large schemes, only further historical and comparative research will uncover the differing institutional arrangements that are responsible. Probably only the Gezira Scheme in Sudan has a similarly venerable history. It would be nice if there were some convenient contrast between . top-down. imposition and grass-roots consultative arrangements. However, the Malian rice schemes were centrally imposed and rigorously regulated by central bodies for many years.

With the smaller, pump-based systems one of the lessons is clearly the importance of scale. The pump, its maintenance and the required cash-flow has to be set at a certain level so that its management can be effectively undertaken by a community of people who all know one another by sight. The contracting out of maintenance, simple as it seems, has been a response to the problem that has dogged so many other small-scale interventions of this type. However, the other lessons concern market access; Mali is less victimised by the large-scale international trade in subsidised rice because by the time it reaches up-country Mali it has become relatively expensive whatever its landed price on the coast. This makes local rice competitive. It might be thought that the cultivation of rice in a large wetlands would itself create problems, but fortunately cultivators can depend on a very effective transport network managed by the Bozo fishing people who are not themselves cultivators.

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