

*In 1989, villagers of Kaniko and Try in Southern Mali complained that many "outsiders", often town-based users of their village wood reserves and grazing lands, also benefited from erosion control measures the villagers were carrying out. This led to the initiation, together with four other villages, of an innovative "Village Land Management" programme in a zone they baptised Siwaa or Dry Bush.*



# The Siwaa experience

Village land management in southern Mali

Rita Joldersma and Negueba Fané

**M**ali's most important rainfed farming area lies in the south of the country, where average annual rainfall ranges from 800 to 1200 mm. It produces cotton as export crop, millet-sorghum and maize. Since the 1960s the system of shifting cultivation has changed to a system of permanent cultivation. The introduction of cotton as a cash crop and animal traction for land cultivation led to an increase in cropped area, as did the increased population pressure. In the region to which the Siwaa zone belongs, more than 50% of the total area is now cultivated. During the last decade village herds have increased rapidly due to the need for draft oxen and the tendency to invest surplus income from cotton in cattle. Farmers also increasingly recognise the importance of livestock to produce organic manure. "Contracts" between farmers and pastoralists for manuring the fields by nomadic herds have become less frequent, because of the competition for fodder.

## Pressure increases

All land is in principle "State-owned", but the State recognises traditional land-tenure arrangements. These give individual villagers the right to cultivate. Fallows, not cultivable lands, are open for everybody to graze animals and collect firewood. The government regulates access of outsiders to village wood resources (*Code forestier*). The communal lands play an important role in the local farming system. Livestock graze there and their manure enhances

soil fertility of cropped land, although soil fertility "mining" still represents an amount equal to 40% of the farmers' total agricultural income (Van der Pol 1992). Furthermore, without firewood, food preparation would become extremely difficult.

The expansion of land under cultivation has greatly diminished the grazing area. Together with the increase in animal numbers, this leads to a livestock pressure exceeding the carrying capacity with current husbandry practices (Leloup & Traore 1989). Deforestation is another threat to the village lands. A study of the degradation in Kaniko village area (Jansen & Diarra 1992) shows an increase in severely degraded lands from 18% in 1952 to 94% in 1987. As management practices for communal lands receive little attention, they are more degraded than the individual fields (Kaya 1992).

## Outsiders benefit

Faced with increasing degradation, the government initiated erosion-control activities. Initially (1980-86) action research was carried out by the national farming systems research institute DRSPR (Département de Recherche sur les Systèmes de Production Rurale) and since 1986 extension activities were carried out by the Division de Défense et de Restauration des Sols (DDRS) within the Compagnie Malienne du Développement des Textiles (CMDT). The latter is the principal development organisation in the area and presently reaches more than 600 villages with its erosion project. However, the villagers of Kaniko and Try, involved since 1984, complained that others benefited

from their work. Firstly, they referred to commercial exploitation of wood by transporters (carters) supplying the nearby town of Koutiala. In accordance with the Forestry Law, the Water and Forest Service granted them felling permits. Villagers had no influence on this permit system and do not benefit financially or otherwise from it. Secondly, they referred to town traders owning large cattle herds which contribute to degradation of the village pastures.

## Villages join to manage land

Following the request by these two villages, the DDRS/CMDT and the DRSPR formed a Technical Group with the Livestock Service, the Water and Forest Service and the Local Government, and suggested a pilot programme of "village land management" (Gestion de Terroir Villageois) for Kaniko. This approach, which is increasingly adopted in francophone Africa, aims at decentralising decision-making about use of natural resources. It is assumed that natural resource management will be more effective if users are responsible and receive benefits from their investments. The villagers from Kaniko and nearby villages were interested to collaborate in a joint scheme. A zone of nearly 12,000 hectares bordered by roads was agreed upon, comprising parts of the village lands of Sinsina, Kaniko, Try I, Try II, M'Peresso and Nampossela. The villagers baptised this zone *Siwaa*, meaning "dry bush". As they gained more confidence in the programme and its anticipated benefits, they decided to extend the zone to 16,000 ha, covering most of the six village territories.

*After managing to reduce wood exploitation by outsiders, villagers in Mali became more aware of their own wood consumption and began to think of how to economise in using fuel.*

The village communities later realised the need to structure the intervillage collaboration. They created an intervillage committee, with 3 representatives from each village, including a woman. The intervillage committee serves as an intermediary between the villages and the Technical Group. Recently, a member of the intervillage committee has joined the meetings of the Technical Group.

### Villagers control woodcutting

At first, the villagers defined the wood problem as one of over-exploitation by outsiders. They asked the Water and Forest Service to stop giving permits, which was verbally agreed. This reduced the use of wood by outsiders to some extent but was not fully effective, as responsibilities of the local community and the government authorities were not clearly defined. For example, villagers were verbally permitted to take sanctions against woodcutters from outside, but they hesitated to do so, feeling insecure facing the wood transporters without any written authority.

After political changes at national level in 1991 which gave more room for local participation and decentralisation, the Water and Forest Service can now, in principle, issue a permit to a village willing to sell wood to outsiders, if it has a proven wood surplus. In such a system the village community can determine at which price to sell the wood and to whom. Benefits accrue to the village community and no longer to the Government and outside transporters. In Siwaa this system is not yet operational, as several questions have to be clarified, such as: Should villagers pay for wood collected on the lands of neighbouring villages? Will control by villagers alone be strong enough?

As the use of wood by outsiders decreased, villagers became more aware of their own wood consumption. To support this growing awareness, DRSPR developed

a simple method to quantify and analyse fuelwood use. Using this method it was concluded that only one village has enough wood for commercial use (Table 1).

The intervillage committee then set annual quota of three cartloads per woman for own consumption and prohibited the commercial use of wood by villagers. It suggested to the market gardeners to use the wooden stakes needed to support the tomato plants for at least two years. The women organised themselves to promote the use of improved cooking stoves. However, alternative income-generating activities to replace the selling of wood by villagers, especially women, has not yet been found.

In all these activities, the issue of social consensus has become a crucial challenge. A system of sanctions has been proposed by the intervillage committee. But its full application seems to be difficult as yet within the local sociocultural context.

### Improved use of pastures

The second problem, over-exploitation of pastures, was initially attributed to the herds of town traders. Commercial cattle raisers were encouraged, by the intervention of the Livestock Service and the Local Government, to leave the zone. Once their frequency decreased, the villagers acknowledged the pressure of the growing number of their own cattle. A diagnostic study showed that the pressure of village herds at 5047 TLU (Tropical Livestock Units) for the Siwaa zone exceeds its carrying capacity of 2667 TLU by 90% (Toure et al 1991). The results were discussed during village meetings and a "problem tree" was constructed to analyse the problem, its causes and consequences. The solutions suggested by the villagers are partly institutional (eg. regulating access to pastures, diminishing the straying of cattle) and partly technical and socioeconomic (eg. growing fodder crops, destocking by large herdowners). Upon the request of some livestock owners, a joint research programme is now being carried out. This is meant to find ways for different types of village livestock owners to improve herd

management and fodder production, while encouraging a more sustainable use of the pastures.

### Lessons

The Siwaa example shows that villagers are interested in managing natural resources beyond the farm level, once these resources become scarce. They are willing to assume responsibility for resource management. This needs, however, a clear definition of responsibilities of village communities and (local) governments and a redistribution of means between them. Effective new regulations and arrangements have to be developed with the villagers. Supportive research into such institutional issues is therefore important. Currently, while awaiting the review of the Forestry Law and the concretisation of the decentralisation policy, there is a tendency towards establishing "local conventions", i.e. agreements between villages and government services, about the use of natural resources. However, villagers have some difficulty in managing differences of interests within and between villages. The local institutions will have to develop ways to handle these, while establishing their authority.

Village land management on its own is not sufficient for more sustainable land use. Alternative solutions have to be found for different types of users (villagers, pastoralists, urban dwellers) to guarantee certain productive and consumptive functions of the natural resources while diminishing the pressure on them.

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Table 1. Local wood production and consumption in the Siwaa area ("cartloads" \*/year).

Village	Production	Consumption	Balance
Kaniko	1533	2912	-1379
M'Peresso	1820	1240	+580
Nampossela	960	2702	-1742
Try I and II	1348	2598	-1250
Sinsina	1450	3224	-1774
Total	7111	12676	-5565

\* 1 cartload = 0.5 m<sup>3</sup>

Source: Joldersma & Diarra 1992.