Natural Resource Management and Decentralisation. Towards Comanagement in Mali?

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Introduction

A new people-centred bottom-up paradigm[1] in development thinking is gaining ground (Chambers 1994). It stresses participation and decentralisation in contrast to the top-down «paradigm of things» which is still dominating the development practice with focus on big infrastructure, industrialisation and irrigation works.

> «..., the emergent paradigm for human living on and with the earth brings together decentralization, democracy and diversity. What is local, and what is different, is valued. In this paradigm, the trends towards centralization, authoritarianism, and homogenization are reversed. Reductionism, linear thinking, and standard solutions give way to an inclusive holism, open systems thinking, and diverse options and actions.» Chambers (1992:66)

There is, in my view, no doubt that recent research results in natural resource management in the Sahel[2] and in African drylands in general would support such a new paradigm. In fact, one speaks about paradigm shifts also in this field.

In this paper, I will first present three recent paradigm shifts within Sahelian natural resource management. In the presentation, I will try to show how these new paradigms point towards and justify decentralisation and delegation of responsibility from the state to local communities when it comes to natural resource management. The « Sahelian» literature on this topic talks about the new role of the state as «enabling», so far without much further discussion of what the role of the state versus that of local communities could be. In the international literature concerning the management of common property resources, the *comanagement model* has recently received a great deal of attention. This model which has been developed through studies of local fisheries management in the North Sea and in North America could bring some inspiration and new impulses to the Sahelian discussion. The paper briefly presents the comanagement model and the debate around it.

Following the recent transition to democracy in Mali, a decentralisation reform is about to be implemented. The final part of the paper discusses some of this reform's impact on natural resource management in Mali. It is basically based on some impressions and preliminary findings from a fieldwork in Southern Mali during February and March this year.

Natural Resource Management and Paradigm Shifts

During the last few years, there has been considerable discussion concerning the environment in African drylands and the management of its resources[3]. Several studies mention what has been labelled a paradigm shift in Sahelian Natural Resource Management (Warren & Khogali 1992, Painter 1993, UNDO 1994). Sahel orthodoxies blaming local people for causing natural resource degradation are now being replaced by alternative views or emerging paradigms in at

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[1] «Paradigm» can be understood as a pattern of ideas, values, methods and behaviour which fit together and are mutually reinforcing (Chambers 1994).

[2] The Sahel is here defined as the zone south of the Sahara desert with 100-600 mm of long-term annual rainfall.

[3] Resources are attributes of nature that can be utilised by man and satisfy human wants and needs. Major resources in this context would be agricultural land, pastures, water, and wood

least three areas: **Range Science and Pastoral Development, Management of Common Property Resources** and the **Fuelwood Debate**[4].

Range Science and Pastoral Development

Sandford (1983) wrote the first influential publication to criticise what he called the Mainstream View on pastoral development. This is a long held universal opinion that the functioning of Sahelian pastoralism is economically irrational and detrimental to the natural resource base and that it results in overgrazing, which is claimed to be an important cause of desertification. This view was held by the colonial administrators and later by Sahelian governments and donor policy makers. The well-known Tragedy of the Commons model discussed below is associated with this belief. According to Ellis & Swift (1988) this mainstream view has been based on the assumptions

- that African pastoral ecosystems are potentially stable (that a carrying capacity[5] can be identified),
- that these potentially stable systems are frequently destabilised by improper use on the part of pastoralists,
- that alterations of system structure (reducing livestock numbers, changing land tenure patterns etc) are needed to return these systems to an equilibrial and more productive state.

The Mainstream View is said to be flawed because it is based on impressions and beliefs without the support of longer time series. Ellis & Swift (1988) criticise this view on the basis of nine years of data gathering on pastoral ecosystems in Northern Kenya. They found little evidence of degradation and concluded that at least for some pastoral ecosystems the above mentioned assumptions are not appropriate.

Research undertaken by the International Livestock Center for Africa (ILCA) in Northern Mali supports these findings (Hiernaux *et al.* 1990, Hiernaux 1992, CIPEA Actualités 1994). ILCA has since 1984 run a programme on monitoring of pastoral resources in the Gourma region (see Map 1). The programme has demonstrated the resilience of the Sahelian rangelands and the reversibility of the degradation of pastoral resources. Due to the domination of annual herb species in the Sahel and their strong seasonal variations, the risk of overgrazing[6] is limited to a short period in time. This critical period is in the growing season before the seeds fall to the ground and can be as short as two weeks. In fact, the two basic properties of Sahelian pastoral ecosystems, unstability and resilience, support the continued practice of transhumance in the Southern Sahel and of nomadism in Northern Sahel. Both these ways of utilising the resources are based on mobility and maximal dispersion during the growing season. For example *Tuareg*

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[4]One could argue for «Desertification» being a fourth area, or maybe an area embracing the others, but to include it here would imply repetition of the arguments.

[5]The distinction can be made between ecological and economic carrying capacity (see Behnke & Scoones 1992 and footnote 6 below). The meaning here is ecological carrying capacity which is defined as a threshold which the grazing intensity should not pass to avoid negative effects on the regeneration of the pastures.

[6]This means here «ecological overgrazing» which is different from «economic overgrazing». The former implies that grazing in a given area has negative effects on the regeneration of the grass cover. The latter means that the pastures in a given area are not able to satisfy the nutritional demands of the livestock. This demand should be linked to the actual objectives of the pastoral production, whether it is meat production for a market or subsistence milk production (Hiernaux 1982, Benjaminsen 1991).

nomads in Northern Mali move their camps approximately every third day in the rainy season. This is because they seek *em-n-amsud* (the tip of the grass) which is said to be preferred by the cattle.

To test the hypothesis of overgrazing leading to desert patches around wells, the *Centre de Suivi Ecologique* (CSE) in Dakar analysed the biomass production around boreholes in the Ferlo-region in Senegal (Hanan *et al.* 1991). During 30-35 years, the areas around these wells have been exposed to heavy grazing. If this kind of pressure on the pastoral resources leads to degraded pastures, it should be detectable in this area[7]. By ground data measurements and the analysis of meteorological satellite images, biomass production up to 25 km from 20 wells in the region was studied at the end of the rainy season in 1987 and 1988. The conclusion was that there was no consistent relationship between biomass production and distance to the wells.

These results were similar to those obtained by a team of geographers from the University of Lund studying an area in Sudan. They concluded:

> «There was no trend in the creation or possible growth of desert patches around 103 examined villages and water holes over the period 1961-1983.» (Helldén 1991: 379)

These new data undermine the base of the mainstream[8] view in African range ecology, and seems to build up towards an alternative theory of the functioning of pastoral ecosystems. This new approach to pastoral development recognises the high resilience and variability of the Sahelian environment, and stresses the need for flexibility and mobility in opportunistic grazing strategies[9] principally due to the strong rainfall fluctuations found in African arid environments. There is now a greater appreciation of the efficiency of the traditional pastoral systems which are based on mobility.

Regarding the implications of this rethinking for natural resource management, two main ideas have emerged. The first is that since local ecological conditions and the management objectives of the users are essential, local herders should be given formal authority for tenure issues rather than suffering centralised control. As Swift (1993) puts it: «The formal system should support the customary system, rather than, as at present, ignoring or undermining it.»

The second point relates to the high variability and low reliability of rainfall in African drylands, which implies that tenure arrangements should be flexible enough to allow herders to continue with migrations. This flexibility would then also allow for overlapping use and mutual access according to customary arrangements found in many pastoral areas, as in the case of Northern Mali for example. The problems of incorporating the implications of this new approach to pastoral development into the decentralisation reform in Mali, will be discussed later in this paper.

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[7]However, Hanan *et al.* (1991) did not study changes in species composition.

[8]The Mainstream View has, due to the recent research, lost ground during the last years, and it is maybe not the mainstream view within the research environments any more. It is, however, still the dominating view within national and donor bureaucracies.

[9]Opportunistic grazing strategies are based on tracking environmental variation (Sandford 1983), which is the principle behind nomadism and transhumance.

The Management of Common Property Resources

In the discussion regarding the management of common property resources in general and particularly those in African drylands, there are generally speaking two opposing schools of thought: **The Tragedy of the Commons model** and the **Assurance Problem argument**[10].

When Garrett Hardin wrote his famous article in 1968 and named it «The Tragedy of the Commons» (Hardin 1968) he put a concept on ideas which had existed for a long time and which had already influenced the policies of colonial governments in Africa. Ostrom (1990) mentions for example that already Aristotle had made observations in the same directions.

Hardin illustrates his model by using an example from a grazing context. His assumption is that the pasture is open to all and that there is no co-operation between the users. Each individual herd owner will therefore try to keep as many cattle as possible on the pastures. As a rational herder, each individual will consider the benefit of adding one animal to one's own herd against the cost of possible overgrazing shared by all herdsmen. Since the benefit for each herder of adding one animal is higher than the shared cost of overgrazing, each individual herder will continue to add one more animal, which finally will bring ruin to all («Freedom in a commons brings ruin to all» (Hardin 1968:1244)).

Hardin's essay quickly became extremely popular and influential and it has since been used to explain resource degradation in different fields such as fisheries, air pollution and the management of forest and water resources. In the Sahel, the argument has been equally influential, especially regarding the discussion about the ecological impact of pastoralism, but also concerning the causes of deforestation. It has legitimised the blaming of the problems in African drylands on rural populations, especially pastoralists.

These thoughts lead colonial and later national governments to put restrictions on local systems of resource management in the belief that these systems are harmful to the environment. Such restrictions include destocking policies, settlement policies, exclusion of pastoralists from certain areas (by agricultural expansion or establishment of national parks) or giving peasants fines for cutting branches from trees or for using fire in the management of pastures and agricultural land. The Tragedy of the Commons model has been used to justify these above mentioned restrictions on local systems of resource management and to argue for more centralised control or for privatisation of land.

Even if the Tragedy of the Commons model might be a useful analytical tool in some empirical contexts, and should therefore not be totally rejected, there are some problems related to the application of Hardin's model on local level natural resource management (Ciriacy-Wantrup & Bishop 1975, Runge 1981, 1986, Berkes *et al* 1989, Ostrom 1990, Bromley 1992) and especially in African drylands (McCabe 1990, Benjaminsen 1991, Moorehead 1991, Swallow & Bromley 1992, Lane & Moorehead 1993, Potkanski 1994). First of all, common property should be distinguished from free and open access. Hardin (1968) uses these two concepts as synonyms, even though he later makes a difference between them and states that he should

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[10]The Property Rights School is sometimes mentioned as a third school of thought in this discussion. According to this approach, common property systems exist where resources have low value and the cost of controlling their utilisation is relatively high (Demsetz 1967). However, this theory is less relevant for discussion here, where the two schools mentioned are opposing each other on the question of the sustainability of local resource management.

have called his article «The Tragedy of the Unmanaged Commons» (Hardin 1991), which by others are called open access resources. Common property resources are not accessible to all, but are exploited by a defined community. Exploitation of common property, therefore, demands membership in the community.

An implicit condition in the Tragedy of the Commons hypothesis is that all the players act on their own independently of the social context. In real life, however, and not the least in Africa, common property arrangements provide complex systems of norms and conventions regulating individual use rights (Runge 1986). This is also an observation made in my own ongoing research in Southern Mali close to Koutiala town (see Map 1) in an area occupied by the *Minyanka* people, where there are specific and different customary rules relating to different resources. These rules vary for example for resources on cultivated land, on fallow land, or on bush land. The rules concerning trees also vary according to the nature of the resource (planted/unplanted tree, type of tree, fruits/fodder/wood etc). As an example; the typical farm trees in the area are the karité also called sheanut tree (*Butyrosperum parkii*) and the néré (*Parkia biglobosa*). The fruits of both are collected and used for a number of purposes. The collection of the fruits from these trees on *cultivated land* can only be carried out by the production unit having use rights to the land. However, the collection of karité fruits on *fallow and bush land* is open to all, while the collection of néré fruits is restricted to the production unit on fallows and to the people from the village on bush land. The explanation of this difference given by the villagers is that there are enough karité fruits, but the néré fruits are in short supply.

Runge (1981, 1986) is using examples from Game Theory to show how the commons may work. However, one could argue that it is not necessary to go via Game Theory to arrive at this conclusion, and that commons work because they are based on institutions with an authority to exclude and sanction[11].

The way one arrives at the same conclusion may vary, but the main point in the Assurance Problem argument is supported by many more than game theoreticians. It states that since developing economies are based on the utilisation of often randomly distributed natural resources, they are faced with a great deal of environmental uncertainty, and common property institutions are a way of decreasing this uncertainty.

> «..., rather than emphasize the right to exclude, (common property institutions) provide for the right to be equally included as a hedge against these uncertain prospects. The expectation that when one is in need, aid will be forthcoming from others in return for a like commitment, may be more agreeable than «going it alone» in the face of nature.» (Runge 1986:625)

The main policy implication of this school is that the state should provide an enabling environment (policy, laws, technical support...) for customary or local systems of resource use to function as much as possible without interference from «above», except in cases of severe conflict between user groups.

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[11]This authority is among the Minyanka the ancestors represented in the village by the *land chief*, who is a customary chief different from the administrative *village chief*

The Fuelwood Debate

In studies of fuelwood and the management of the woody vegetation there is also a tendency of gaining new knowledge and moving towards a new paradigm. Generalisations about Africa's «fuelwood crisis» have been called *Gap Theory* (Leach & Mearns 1988) and *Fuelwood Orthodoxy* (Cline-Cole *et al.* 1990b). These generalisations are built on the assumption that general and widespread deforestation caused by household fuelwood consumption has taken place. Deforestation is here seen to be spreading out from centres of habitation, in wider and wider circles. The fuelwood crisis is interpreted as a problem of a growing gap between a population-driven demand and diminishing resources. This view has been presented in a large number of influential publications (by, for example, Eckholm *et al.* 1984, Timberlake 1985, Harrison 1987). However, there are few data to support this belief. In fact, few data exist on the environmental and socio-economic aspects of fuelwood use at the local level in the drylands of Africa in general (TransEnerg 1985, IUCN 1989, CIRAD-CTFT *et al.* 1990).

In an earlier study (Benjaminsen 1993), I wanted to provide local data on the fuelwood situation in an area of the Sahel, and to investigate whether the above generalisations are valid when confronted with these data. The area chosen for this purpose was the Gourma region in Mali, which is situated in the northern part of the Sahel. This is an area often referred to as the worst hit by a general and widespread deforestation which is related to household fuelwood consumption (DNEF 1985, TransEnerg 1985, UNDP/World Bank 1992).

It appeared that there is no relationship between deforestation and local fuelwood consumption in the area. The fuelwood used comes from dry wood collected from dead trees. The deforestation observed is only caused by drought. The fuelwood crisis in the Gourma is therefore not a problem of a growing gap between an increasing demand and diminishing resources and the fuelwood problem is not an ecological one (deforestation), but it is rather of a social and economic character. Collection distances are increasing and so is money spent on fuelwood. In the region, there is no physical scarcity as a whole. However, since collection distances are increasing, there may be an economic scarcity (*sensu* Dewees 1989) in some villages in the way that the household's access to labour or to income limits its access to fuelwood. Interventions in the fuelwood sector should, in such cases, aim at decreasing economic scarcity instead of focusing on physical scarcity.

The need for detailed data is also an important conclusion in Cline-Cole *et al.* (1990a,b). They analysed field data from the Kano area in Northern Nigeria and their results directly contrast with the situation presented by Eckholm *et al.* (1984:28) who claimed that

> «... rising fuelwood demands in Kano (over the last 25 years) encouraged farmers to overcut trees, selling off their biological capital; now farmland within a 40 km (25-mile) radius of the city has been largely stripped of trees.»

But according to Cline-Cole *et al.* (1990b:522-523)

> «... the zone with highest tree densities (the inner Close-Settled Zone) is not only that which supports the highest rural population densities -up to 500 people per km²- but that closest to the urban center of Kano with its estimated one million plus inhabitants ... Remarkably, this zone recorded a 2.3 % per annum increase in tree density between 1972 and 1981, in the wake of the disastrous drought of the late 1960s and early 1970s when pressure on woody vegetation from several sources must have been very intense.»

The increase in tree density probably happened because peasants had been maintaining the tree stocks by planting and by protecting spontaneous seedlings. Seventy-one per cent of the respondents in the Kano Close-Settled Zone planted trees on their own farmland (Cline-Cole *et al.*, 1990a). The great majority of this tree planting was for economic use, and not for firewood alone. The mango tree was the most popular species for tree planting.

The above mentioned studies indicate that Gap Theory and Fuelwood Orthodoxy are over-generalisations which tend to gloss over important regional diversities. In addition, one of the basic assumptions of these generalisations is that household fuelwood consumption is the principal cause of deforestation. This has also, as shown later, been the assumptions of Sahelian and Malian forest policies in the past. As Mearns & Leach (1989) point out, instead of being the principal cause of deforestation, fuelwood is usually a by-product of land clearance for agriculture in Sub-Saharan Africa.

Comanagement

According to all these three new paradigms, there is no rationale for natural resource management by the state from above (state management). We note that the implications are that the formal system should support the customary system by providing policies, laws and technical support, preferably in line with the new thinking, and that local systems of resource use should be given the possibility to function as much as possible without interference from «above». We here see the contours of a management system which resembles the comanagement model, referring to different types of co-operation between the state and local resource users. This model has recently received considerable attention in the literature regarding the management of common property resources (McCay & Acheson 1987, Feit 1988, Jentoft 1989, Pinkerton 1989, Sagdahl 1992, Jentoft & Sandersen 1993, Sandersen 1995). The concept as such has been developed through studies of the management of local fisheries in North America. One may, however, also associate this concept and model with the current development in the Sahel concerning the management of natural resources and the trend towards decentralisation.

> «The term *comanagement* signifies their (local communities) political claim to the right to share management power and responsibility with the state. It is an attempt to formalize a *de facto* situation of mutual dependence and interaction in resource management.» McCay & Acheson (1987:31-32)

As Sagdahl (1992) points out, the concept has been used in relation to a great variety of institutional set-ups including different combinations on the scale from self to state management[12]. However, although the definition and use of the term vary, governmental authorised local self management is normally understood as the essence of comanagement (Sagdahl 1992). According to Jentoft (1989:144), to qualify for comanagement, the system should not only let local people be part of the decision-making process, they should also have

[12]The term *self management* is used on local systems of resource management which do not depend on the delegation of responsibility or authority, nor on the legal recognition of rights by the courts, legislation or other legal instruments of the state for their existence or essential operation (Feit 1988). *State management*, on the other hand, is management deriving from the authority of a nation state and which tends to give priority to national interests over local ones (Feit 1988)

«... authority to make and implement regulatory decisions on their own.» Jentoft sees comanagement as formal arrangements which require a formal leadership and an executive staff.

> «It is a meeting point between overall government concerns for efficient resource utilization and protection, and local concerns for equal opportunities, self-determination and self-control. The responsibility for initiating regulations is shared. The government's responsibility may be to provide the general framework for operation ... such as: the general legislation to install co-management principles ...» Jentoft (1989:144)

The proposed decentralisation reform in Mali falls right within this debate concerning the role of the state versus that of local communities in natural resource management. Before describing the possible problems and potentials of decentralising natural resource management in Mali, I will give some of the background to the current reform.

The Forest Policy in Mali: An Example of State Management

The Forest Policies which have been implemented in the Sahel until recently are direct results of the 1935 Forestry Decree of the French colonial administration. This decree was again derived from article 539 in the French *Code Civil,* or *Code Napoléon* as it is also called, from 1800-1804 which states that

> «Tous les biens vacants et sans maitre ... appartiennent au domaine public.»

This meant that the state owned all land which was considered «empty» and without an owner. The only way to establish legal ownership of the land was through productive use (*«mise en valeur»*), which in practical terms would mean farming. Thus, pastoralism, the collection of wood and gathering of wild grains, fruits and medicinal plants would fall outside the European notion of property which was used. The result was that large areas of fallow land and silvo-pastoral land was annexed by the state (Lai & Khan 1989). This has again led to the present antagonism between customary rules and regulations and the written regulations and laws issued by the state. According to Elbow & Rochegude (1990), customary communal use rights were restricted or suspended by the colonial administration because they were regarded as being inconsistent with rational forest management.

The forest law of 1935 defined the authority of the state to protect forests from overuse and to protect and restore forest areas that had become degraded (Elbow & Rochegude 1990). The resulting forest policy was primarily concerned with conservation and a system of permits for use and fines for rule violation was created.

At that time, it was generally assumed that local Sahelian populations are causing degradation through a general overuse of the resource base. Travel accounts and reports from the colonial administration were already worried about an encroaching Sahara, which was attributed to local resource management (see for example Bovill (1921)). Later Stebbing (1938) brought widespread attention to the «advancing desert» citing a colonial officer in Niger and the present Mali who claimed that the desert had advanced southward at a rate of 1 km per year for the last three years.

The Forest Service («*Le Service de Eaux et Forêts*») which was created under the 1935 legislation to implement the forestry policy, recruited its agents from the military and the police. Even today forest agents are regarded by Malian peasants more as policemen than as extension workers (Lawry 1989). However, from 1981 the functions and tasks of the Forest Service were expanded beyond pure environmental protection to include forest management. The mandate then shifted to also comprise extension work and technical support to peasants, but still the background of most forest agents and the culture within the Forest Service are more compatible with the police function than with extension work (Brinkerhoff & Gage 1993).

The 1935 forest law has been revised twice in Mali, in 1968 only with minor modifications, and in 1986 resulting in an even more severe system. The management was, until the revolution in 1991, based on the system of permits and fines. The fines given were extremely severe compared to the income level in Mali. In fact, these exceptionally high fines were established in 1986 to discourage unsustainable use of the woody vegetation. According to the forest law of 1986, which was valid until a new forest law was signed by the President on 18 January 1995, it was illegal to cut trees or collect dry wood for sale without permission from the Forest Service. Farmers were even required to secure permits to cut or use trees they had planted themselves on their own land. It was, however, allowed to collect dead wood for one's own consumption, but local forest agents profited from their positions as controllers by arbitrarily giving fines and by pocketing a portion. During an earlier study of fuelwood management in the Gourma-region in the Sahelian part of the country (Benjaminsen 1993), many of the women interviewed said that they did not collect wood for their own consumption, for fear of getting fined. This meant that many more people bought their wood than what would be the case in a less restricted situation. Because of the eagerness of the forest agents to impose fines, an important clandestine wood market had emerged in the Gourma. Wood was bought either on the market or from wood traders selling at home or moving around with their merchandise. Some of these persons would sell legally, but most traders outside the markets did not have a permit. In the villages in the Gourma, 30-90 % of the fuelwood trade was hidden when the survey was carried out in 1990. This rate varied from one local situation to another depending on the attitude and eagerness of the local forest agent. Fines to consumers and traders varied between 5000 and 25 000 F CFA (100-500 FF at the time). If the people could not pay, livestock would be confiscated, or people could be imprisoned. During recent fieldwork in Baramba village in Southern Mali I was told that before 1991, the village collected about 300 000 CFA (then 6 000 FF) to pay off the local forest agent and to make him return immediately to his local headquarters. They knew that if he started walking around in the village area, the fines they would receive would be considerably higher.

Because of this policy of harassment and the lack of dialogue with the local communities, there has been a general antagonism between the Forest Service and the rural people throughout Mali. However, after the political change which started in March 1991, the authorities have tried to attenuate this opposition.

Political Change

In March 1991, former president and dictator through 23 years Moussa Traoré was overthrown through demonstrations and popular unrest which culminated in a coup d'etat. A transitional government was established in a co-operation between the democracy movement and the reform friendly part of the military and a process of democratisation started. In short time, a number of public forums were organised. The most important was the National Conference which took place during two weeks in July/August 1991. The conference had about 1000 delegates representing the government, political parties, unions, different associations and organisations and rural populations.

A draft Constitution was produced, which provides for the empowerment of local populations, separation of powers, protection of human rights, and independence of the judiciary. During the conference, frequent calls for decentralisation and severe criticism against the state came up (Malian newspapers «*Aurore*» and «*Les Echos*» from July/August 1991).

In December 1991 another conference called «*Etats-Généraux du Monde Rural*» was held. It was organised because there had been criticism that rural populations had not been sufficiently able to voice their concerns during the National Conference, because the language of the conference was French and because rural people had not been adequately represented. Over 300 farmers, herders, fishermen, and woodcutters convened in Bamako for this second conference (Bingen 1994), together with representatives from the government, organisations and donors. As in the National Conference, the state was critiqued for abusing power and many interventions concerned the Forest Service in particular. It was among other issues demanded that responsibilities for land tenure and natural resource management be transferred to rural communities and that the rural development tax be collected and managed by local government. It was also recommended that the government should limit its role to arbitration of conflict, planning and technical support (Miller in Brinkerhoff & Gage 1993). A few months later, the government published its *Schéma Directeur du Secteur Développement Rural*, where many of the demands were included. It is worth noting that many of the radical recommendations regarding land tenure, natural resource management and the role of the state issued by the different conferences and workshops held after March 1991 are very much in line with the policies of the major donors in Mali, for example the World Bank and the French CCCE (*Caisse Centrale de Coopération Economique*) (Hesseling 1994). Conferences taking place were also normally funded by interested donors.

In 1992, a referendum on the new Constitution, presidential elections and elections for Local Government and the National Assembly were held. The new government headed by President Alpha Oumar Konaré was inaugurated in June 1992. The National Assembly convened in July with Konaré's party ADEMA (*Association pour la Démocratie au Mali*) having gained 65 % of the seats.

Decentralisation

During the pre-colonial era, the Sahelian and Sudanian zones of West Africa contained a varied and dynamic landscape of large and small autonomous political units. Even the ancient empires of Ghana, Mali and Songhay seem to have been made up of relatively decentralised political

units (Hesseling 1994). However, during the colonial period, a heavily centralised government was installed in all the French colonies. During colonial time, the main administrative unit in Mali, or *Soudan Francais* as the colony was called, was the *Cercle*. It was governed by a French *Commandant* who was the government's representative. Sometimes the Cercle was divided in *Subdivisions* also headed by French civil servants or army officers. The Cercles and Subdivisions were again divided in *Cantons* among sedentary peasants and *Tribus* among nomads, each headed by a *Chef de Canton* or *Chef de Tribu*, who were considered as administrative agents of the state responsible for carrying out the orders from above, and who were chosen by the French among the customary chiefs in the area. At the end of colonisation there were about 500 Cantons and Tribus in French Sudan (DIRASSET 1994).

The Malian government kept its centralised structure after independence. However, both the Keita government (1960-68) and the Traoré government paid lip-service to «decentralisation», because of demands for a less centralised structure emerging from time to time, without much change taking place on the ground. In the late 1980's the issue became more and more important, and in 1987 donors sponsored a conference on decentralised planning held in Gao. Thereafter, a series of regional seminars on decentralisation were organised culminating in the National Seminar on Decentralisation in May 1990 in Bamako.

As mentioned, after March 1991, critique against the centralised state and its abuse of power and calls for decentralisation have frequently been heard. The transitional government and the government of the Third Republic have been prepared to seriously review the structure and functioning of the administrative system of the state. This trend towards decentralisation and redefinition of the role of the state to the provision of an enabling environment is very much in line with current donor policies. Without doubt the donors have used the occasion to encourage the Malian government to undertake a major reorganisation. In fact, these changes are not only encouraged, but may sometimes also be imposed by foreign aid (Mathieu 1994). The administrative reorganisation also includes changing the Forest Service. Parts of it are now closed down and the rest has changed its name and work tasks to concentrate on technical assistance.

The new Constitution, adopted by referendum in 1992, is committed to decentralisation, and in 1993 a law on decentralisation was adopted by the National Assembly (Loi 93-008). Its main points are:

* A recognition of the Region, the Cercle and the Commune as territorial units or *collectivités* in the rural areas. This means that the Arrondissement, the lowest administrative level today will be suppressed and replaced by the Commune, which is supposed to be at an even lower level and closer to the people.
* Independent administration of these *collectivités* by elected assemblies or councils.
* The management by the *collectivités* of their own resources.
* The principle of tutelage[13] by the state is conserved.
* No *collectivité* has the tutelage over another.

This law, which gives the general framework for decentralisation in Mali, points towards some kind of comanagement. The idea is that each Commune will elect its Council headed by a

[13]Tutelage (*tutelle*) is by Mission de Décentralisation (1995) defined as all the mechanisms of the state which permit the state to compel the decentralised authorities to respect the legality and the general interest.

Mayor who will be responsible for the administration of the area. The state will only be represented by a technical advisor in each Commune, who will formally not have a say in politics. Such a setup, which could be described as governmental authorised self management with the government providing the policies, laws and technical support, while delegating the responsibility for natural resource management to local communities, is the core of comanagement.

Alone, the law is not enough to start the implementation of decentralisation in Mali. It is being joined by other legislative texts recently approved or under preparation. A *Mission de Décentralisation* has been established within the Prime Minister's Office to lead the process. It aims at having a draft proposal for a new administrative division ready by the end of 1995 to be forwarded to and discussed by the government and the National Assembly. To meet this deadline, the villagers have been requested to come up with proposals for grouping the villages in Communes before 30 June 1995. In all the Cercles there is a Groupe Local d'Etude et de Mobilisation (GLEM) where the political parties and the technical services of the local administration are represented and which is responsible for informing and sensitising the populations on the decentralisation reform. Since there is not enough time or money for the GLEM to visit all villages or local communities in a Cercle, resource persons from some of the villages are picked out to bring the information to the people. In the Koutiala Cercle in Southern Mali, a group of three resource persons where chosen for groups of 5-10 villages. These persons were briefed on the forthcoming reform and asked to organise public meetings in each group of villages.

Due to this urgency, some critique has been raised concerning the pace of the reform. There are already a big number of tenure conflicts in Mali. If the new administrative division is undertaken in a hastily manner, it is pointed out that it will only increase the number of conflicts and accentuate the ones already present. During discussions with observers in Mali in February/March 1995 the rapid pace was explained by the fact that the ruling party ADEMA is putting pressure on itself and on the administration in order to show some concrete results in this area before the legislative elections in 1996 and the next presidential elections in 1997. Some also claim that the decentralisation process in Mali is a donor-driven top-down process which the peasants have not asked for. It is said that decentralisation fits well into the IMF and World Bank-policy of structural adjustment and of decreasing the responsibility and presence of the state. It is stated that even though it is true that the peasants have demanded elements of the decentralisation policy during the earlier mentioned conferences (criticising the forest policy, claiming the management of customary land), they have never articulated a decentralisation policy. Many rural people are in fact afraid that social services in the rural areas will become even worse than they are, because the state will decrease its presence and responsibility. In addition, in the state bureaucracy there is not surprisingly some hesitation related to the whole idea of delegating power to decentralised units. This was also stressed by the former minister for rural development, Boubacar Sada Sy, referred to in Mission de Décentralisation (1995). One relevant question often heard from sceptical civil servants is: «What is the capacity of the basically illiterate rural people to take on such a responsibility, like organising elections and collecting taxes?» «Tax collection was difficult before,» it is said, «and it will not be easier now.»

It is also worth noting that the village has not been identified as a territorial unit or *collectivité*. This has met some serious criticism from individual Malian scholars. In farming communities the village is the basic customary institution for natural resource management and other

decision making. Not recognising the village as a decentralised authority leads Coulibaly (1994) to ask about the profound nature of the reforms proposed. The choice today is according to him between a simple policy of deconcentration aiming at maintaining the main features of the old state structure, and a policy of profound change which should lead to a real power-sharing.

The decentralisation policy in Mali is based on the *Gestion de Terroir* approach, which has become so popular in project planning in the Sahel. According to one interpretation of the approach, it could be said to be part of a new people centred bottom-up paradigm recognising that people are capable of managing their own environment. There are, however, different interpretations of the approach, and the term has also been coopted by governments and donors and used in top-down and technically oriented development programmes and activities (Degnbol 1995).

Terroir refers to the land area including all its resources which a given village has customary use rights to[14]. Gestion de terroir refers to the actual management by the village population of its terroir. It may concern one village with its terroir or a group of villages with their corresponding terroirs. The latter is what the decentralisation reform in Mali does, where a group of villages, together constituting a Commune, will actually own their village terroirs and have the responsibility of managing the natural resources within the area. In Southern Mali which is dominated by *Bambara, Minyanka* and *Sénoufou* farmers the terroirs are fairly well defined, even though minor conflicts may arise in border areas between the villages, and more serious conflicts in cases where Fulani pastoralists depend on pastures of such village terroirs.

In Southern Mali, rules concerning customary access to natural resources of a terroir vary according to the resources in question. Access to some resources like pastures, firewood and wild plants is traditionally open, while resources on agricultural land are in most cases reserved for the individual production unit having use rights to the land. One should add here that there is a tendency since the political change in 1991 to transform some of what used to be open access resources within a village terroir to common property resources reserved for the people from the village. Traditionally, access to resources like pastures, firewood and wild plants, was usually granted by the village authorities to pastoralists and neighbouring villages. Pressure on the resources was low and there was little risk of overexploitation. In addition, the colonial state and later the Malian state claimed that all land not being directly put to use through farming was owned by the state. This meant in practice that it was formally open for all. So, when population pressure on the resources increased, there was no legal possibility for the villagers to regulate access to resources outside agricultural land. This is now extensively taking place in Southern Mali. Many villages are assisted by gestion de terroir-projects to establish internal conventions. Other villages are taking the initiative themselves to enact formal rules regulating the use of natural resources on their terroir. These rules are first of all banning charcoal production, because it is considered to exhaust fuelwood resources and because local people do not use charcoal. Most of the charcoal production started after 1991, profiting from the vacuum created after the decline of the Forest Service. The main destination of the charcoal is Bamako and the villagers see this as a free exportation of trees from the area. The rules established also determine how many cart loads of firewood each woman from the village is allowed to exploit each year, while people from neighbouring villages and others are denied access to the fuelwood resources. Some villages also have rules concerning bush fires

[14] An example of a village terroir is given in Map 2

and the clearing of new agricultural land. The conventions are based on a system of permits and fines. The permits to exploit a certain resource are given by the village chief, in many cases upon payment of a fee, and a group of young men is picked out to survey the village terroir searching for violators of the rules, who would be brought to the chief and asked to pay a fine. The local administration has in many instances endorsed these conventions, and in cases of resistance from the violators, the Forest Service would be called to recuperate the fine on behalf of the village. This experience, which is a good example of comanagement, is just in its infancy in Mali, but already one may conclude that there are some promising results and that the gestion de terroir approach has proved its usefulness when it comes to the management of natural resources in such settled village communities as the ones found in Southern Mali.

However, one major criticism is that the approach is not suited for pastoral areas (see f.ex. Painter 1993), because it is based on demarcating village land, which is usually not a good idea in a pastoral setting. As described earlier in this paper, the non-equilibrium approach within range science has shown that Sahelian pastoralists follow opportunistic grazing strategies and need flexibility and mobility to utilise dispersed resources. This would be difficult to obtain within a fixed management system based on the terroir concept. The fear is now that for example a Commune in a settled village community would be able to exclude pastoralists who traditionally use the terroir's pastures and water resources during a time of the year. One risks that the Communes start claiming exclusive communal rights to their terroirs.

As one leaves Southern Mali and approaches the northern regions, the terroir concept becomes increasingly problematic. Not only is the concept difficult to apply on migrating pastoralists like the *Fulani,* the *Tuareg* and the *Maure*, but also the *Bozo* fishing populations along the Niger river and even the *Songhay* farmers also settled along the Niger exploit natural resources which are dispersed in the landscape. All these groups have their customary systems of access to and control over resources. The Bozo also migrate, while the Songhay do not have a continuous terroir around the village like what is the case in the south, but rather a system with fields spread out over a certain area and often several km apart. In between one might find other populations like the Fulani or the Tuareg customarily using for example *bourgou* (*Echinochloa stagnina*) pastures in the river basin.

In such cases, the question of how to include customary institutions in the decentralisation process and how to limit the Communes is extremely complicated. As an example of the difficulties the decentralisation reform might encounter in a pastoral environment, I propose a brief look at resource management among the pastoral Tuareg of the Gourma region in Northern Mali.

The Tuareg system of resource management is based on a vertical and horizontal social division. Access to resources is a function of both. The Tuareg society is highly hierarchical and composed of social groups of different ranks, from traditional slaves or servants (*iklan* or *bella*) to the aristocratic warriors (*imoushar*). Decisions concerning resource management are taken on different levels from the household, via the camp to the *tawsit*. This is a social unit based on kinship and political alliance, and the term is used for groups of different sizes, both corporate groups and administrative units (fractions) recognised by the government (Pedersen 1995).

The perception and management of space and of the environment among the Gourma Tuareg is based on the existence of key resources spread out over a wide area. This management has

to be flexible and opportunistic since the existence of natural resources like pastures, wild grains, crops and surface water are highly dependent on the strong rainfall fluctuations in arid lands. The need for flexibility and for access to vast areas leads to a land use system which is not based on exclusive rights. However, due to strong social hierarchies, some social groups have priority to the resource over other groups. Gallais (1976) gives examples from the Gourma and from other pastoral environments where a group B is taking over the use of a resource after group A when the latter perceives the resource as «used up». In this manner, there is a relay in the utilisation of the resource. Around any key resource, one therefore might find several users with different ways of utilising the resource and having different use rights to the resource.

Important in the conception of space among the Tuareg are the terms *akal* and *hinzouzar*. The first term which means «land» refers to the area within which one lives. The second term means «places where one lives» (within the akal). In practice, this would be the migration route tying together the key resources (bourgou fields, wells, salt licks, depressions in the landscape where surface water is found (*oueds*), good pastures, areas where wild grains are collected). Both akal and hinzouzar seem to be quite stable over time for the Gourma Tuareg, and the key resources within the akal are therefore exploited according to a relatively stable traditional system (Gallais 1975). Land is not appropriated and access to land appears rather open. Precise rules are governing water rights. By investing labour in constructing a well one achieves the right to manage the water of that well. Since water is a scarce resource, the land use system is based on appropriation of water rather than land. Without water, the land is useless.

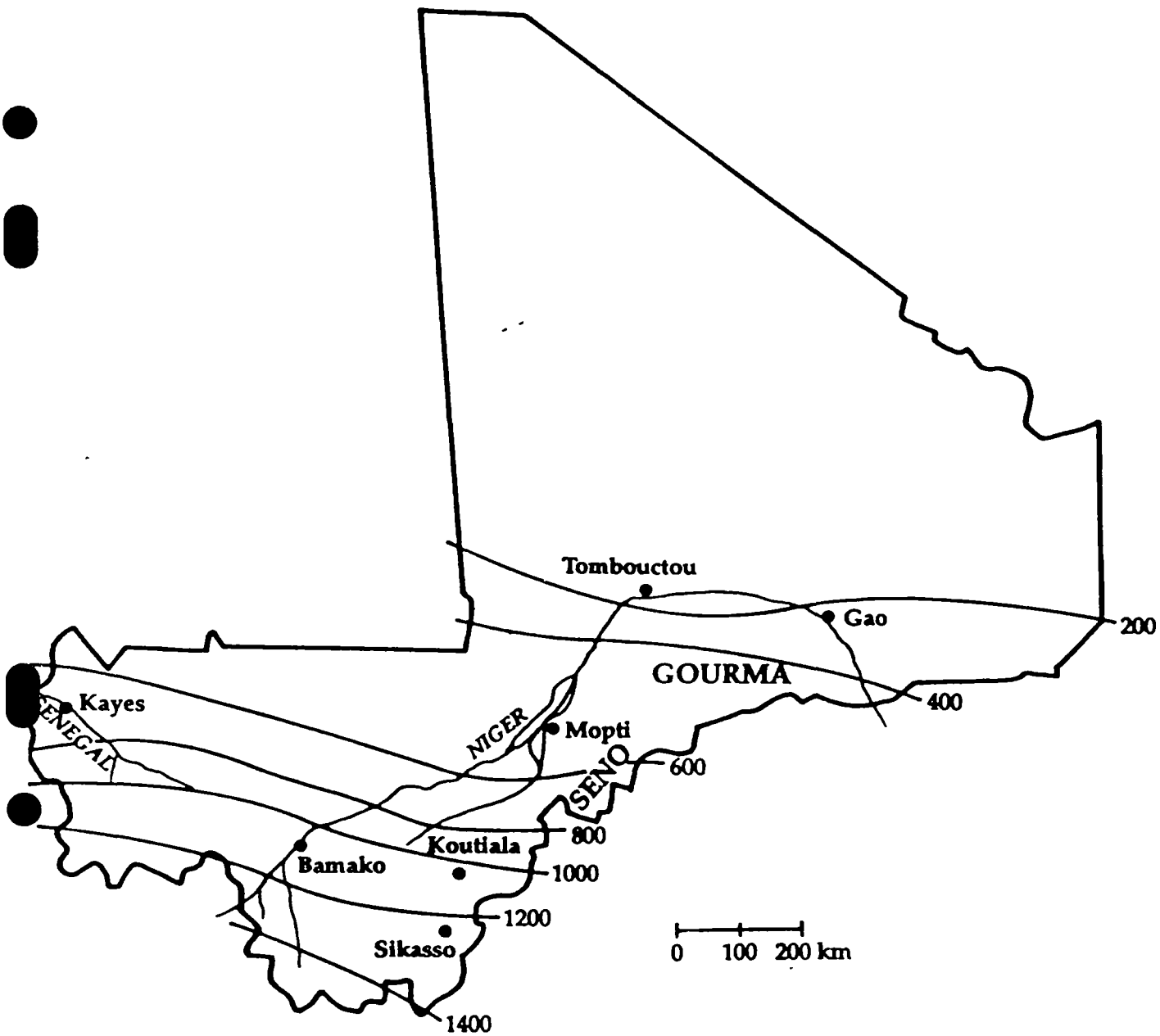
If one looks at the akal of each group in the Gourma, they are overlapping considerably, except for groups with the same social rank (Gallais 1975). The different warrior groups of the Gourma, for example, have territories well apart. The land use system of the Tuareg is therefore based on the principles that groups with equal status avoid each other and that priority of access to the essential key resources is determined by social rank. In such a complex system, one should be extremely careful in establishing new structures for natural resource management, and in any case *flexibility* should be the key principle for any system in this pastoral environment.

Conclusion

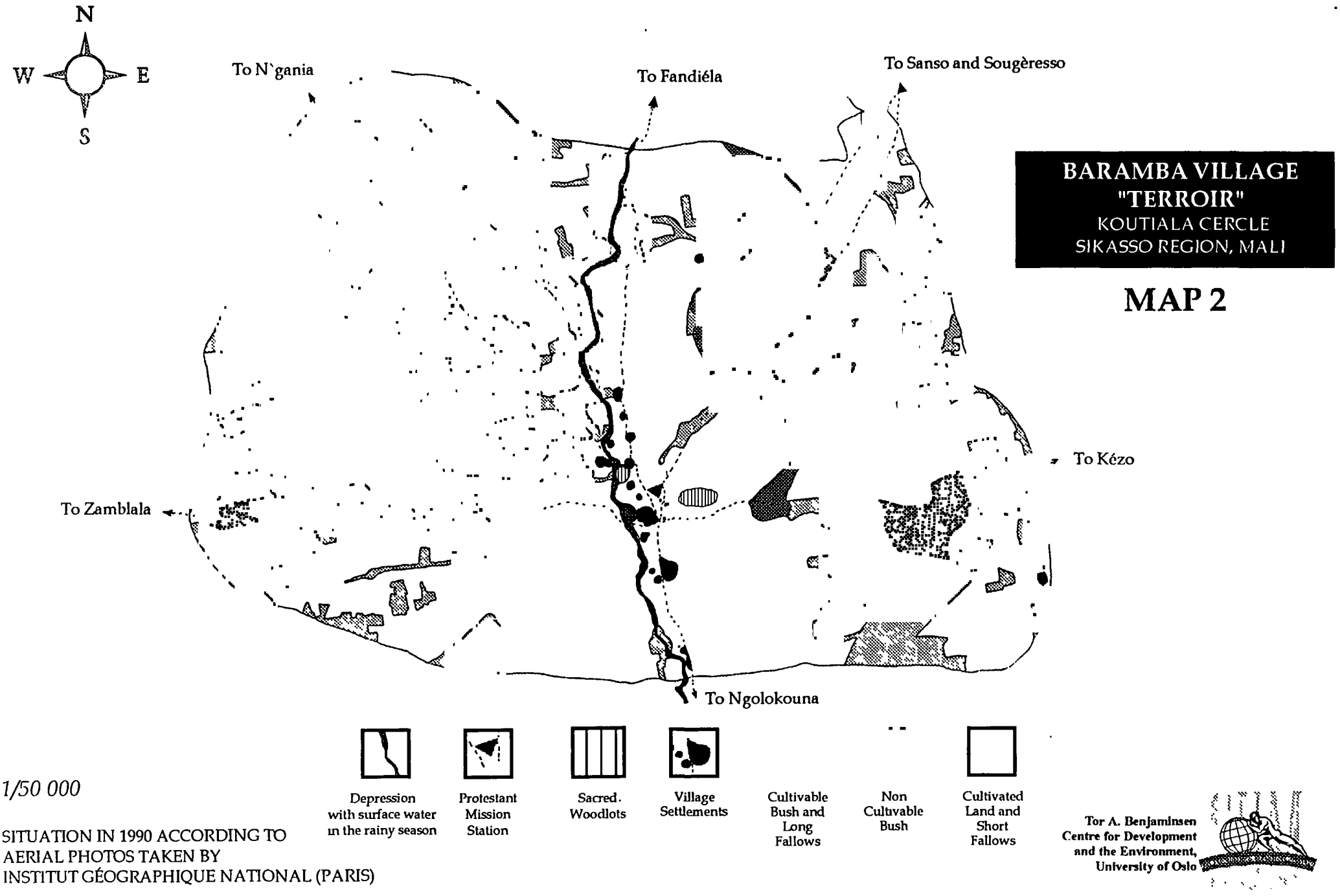
In this paper, I have tried to show how different new paradigms in development thinking and in natural resource management focusing on local people's own capacity to find solutions to their problems fit together. The comanagement model, developed through studies of local fisheries in the North, and which is defined as governmental authorised self management, is a management model which comes to mind when discussing opportunities and problems related to decentralisation and natural resource management in the Sahel, and in particular in Mali. Some of the management arrangements which have been established in Southern Mali during the last year, and which are based on the terroir approach, may definitely be defined as comanagement. In these cases, village people are defining the rules concerning the natural resource management and request the government to endorse them. This is said to be a model which the Communes to be established will follow. However, whether Mali is moving towards

a real decentralised form of comanagement is yet to see. The decentralisation process is just in its initial phase and there are many actors and interests involved.

In parts of Southern Mali, the comanagement model founded on the terroir concept may work well. However, in large areas of Mali where pastoralists are present and depend on scattered resources, a terroir based model may be in trouble. In such areas, flexible arrangements without exclusive communal rights are needed.



Map 1. Mali with average annual rainfall.



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SITUATION IN 1990 ACCORDING TO
AERIAL PHOTOS TAKEN BY
INSTITUT GÉOGRAPHIQUE NATIONAL (PARIS)

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Hei.

Her følger figur 2 til mitt paper. Vil du være så vennlig å legge den inn mellom fig 1 og litteraturlista. Takk.

Vennlig hilsen

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