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International
Institute for
Environment and
Development

Drylands Programme

Issue paper no. 81

**Decentralised
natural resource
management
in the Sahel:
overview and
analysis**

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December 1998

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INTRODUCTION

This paper examines the main factors which support effective decentralised natural resource management, (DNRM) based on a series of local level case studies conducted in several Sahelian countries during 1996-1997.

The paper begins by examining the circumstances under which DNRM can emerge and when it is unlikely to develop. It then identifies key features and accompanying measures to promote DNRM, some of which have been adopted by several Sahelian countries. The final section of the paper describes the institutional reforms under way in the Sahel and examines some of the problems encountered in implementing the various measures.

This paper makes one basic assumption: that some form of decentralised natural resource management is likely to produce better results than a centralised system of management. DNRM is thus seen as being a desirable state of affairs although it is recognised that not all decentralised NRM will perform well - for it to do so, a number of conditions need to be operative.

DECENTRALISED NATURAL RESOURCE MANAGEMENT IN THE SAHEL

Preconditions

In the majority of Sahelian countries agricultural land, forests and sylvo-pastoral resources are largely controlled by local or customary institutions on a day to day basis. Given this situation it is useful to identify the circumstances under which local level management of natural resources does not occur.

Low perceived value

Where natural resources are seen to be of relatively low value, rural Sahelians do not tend to involve themselves in the time-consuming task of managing them.

- In the central *arrondissement* of Kita (Mali), a highly innovative ILO/forestry service project has been trying to increase the value of fuelwood exploitation to local villagers by establishing rural markets for firewood. But few villages appear so far to be taking an active interest in forest management, for several reasons. First, it is an area with abundant woodland. Second, income from firewood cutting is small compared to revenues derived from the recent introduction of cotton farming in the area. Third, the local market for firewood is limited to the town of Kita which only has a population of around 20,000. Hence, returns to firewood management and marketing are few, relative to other activities available to farmers.

- Prior to the gum arabic boom of the late 1980s and early 1990s, land management in the region of Dourbali, in Chad, was very loose. Population density in the area is low and villages have extensive territories. Sylvo-pastoral resources were thus abundant and of relatively low value and, as a consequence, villages did little to control access to them. However, the rise in world prices for gum arabic was to result in a major transformation in the way that local communities managed access to their lands. Since the gum boom, village territories in Dourbali have become much more clearly defined and much more intensively managed such as by the allocation of Acacia senegal stands to individuals.

Rural Sahelians are rational in the use of their time and will not incur costs unless there are good reasons to do so. When a resource becomes more valuable, people will invest in managing it more closely.

- Located in the old groundnut basin of Senegal, the densely populated area of Koulouck is today faced by declining soil fertility, reduced availability of browse, and an emerging firewood shortage. Of the few trees remaining on village territories, "kad" (Acacia albida) are by far the most valued - by fixing nitrogen they sustain soil fertility, as well as providing valuable fodder for livestock and firewood for village women. In an attempt to conserve the remaining stands of "kad" in the area, the local farmers' federation (UGK - Union des Groupements de Koulouck) began a protection program under which all cutting of trees was banned. The UGK scheme employs local villagers as forest guards, responsible for watching over "kad" trees in their area.

- Increasing urban demand for domestic energy and the construction of the Mopti-Gao tarred road (completed in 1985) have led to the stocks of dead wood in the Kelka area of north-central Mali a rise in value of. As a result, increasing numbers of woodcutters exploit the forest resources of the Kelka. Nearby villages, supported by the forestry service and an international NGO, in an attempt to control cutting and maximise local benefits, began asserting control over access to the forest from about 1990, introducing rules about woodcutting and tree use. In addition, the thirteen villages also created a supra-village level association, Waldé Kelka, in 1992 in order to regulate relations amongst themselves and to present a united front vis-à-vis outsiders.

One clear lesson that can be drawn from the case studies is that rural people will not watch resources of value be frittered away, and will want to profit from use of these resources themselves.

Authority and capacity

However, it is possible for a resource to be relatively valuable yet not be subject to effective management. This seems to occur for two reasons: authority and capacity. Where local populations do not have the de facto authority or capacity to manage natural resources, DNRM is unlikely to occur. This may be because local people and institutions are unable to assert themselves in the face of external powers and outside users.

- In order to meet Dakar's demand for domestic energy, Senegalese woodcutters and charcoal makers have gradually moved eastwards, directed there by the forestry service. Today, most of Dakar's charcoal demand is met by production from the Tambacounda region and, in particular, from forests in the arrondissement of Maka Coulibanta. Possessing charcoal production quotas and legal cutting permits, Senegalese fuelwood traders send their labourers (most of whom are of Guinean origin) into the forests of Maka, where they work without needing to have local authorisation. Several local communities have tried to oppose this woodcutting, but without much success. Not only do woodcutters insist that they have a right to exploit forest resources - the forestry service, responsible for issuing quotas and permits, also maintains that woodcutting is being undertaken in a rational and sustainable way.

- During the pre-colonial and early colonial periods, access to the wetland pastures of lake Fitri (in Chad) was controlled by the Sultan of Yao. At the end of the rainy season, Arab nomads would seek his authorisation before moving their herds onto these valuable dry season pastures. This allowed the Sultan to ensure that the local millet harvest was finished by then and thus to reduce the likelihood of conflict between herders and farmers. Since the second half of the colonial era, and continuing up to today, however, the Sultan no longer has the authority to control access to the lake's pastures. As a result, herders tend to enter the area much earlier than before, often before the millet harvest is in, thereby increasing the likelihood of disputes breaking out between themselves and local Bilala farmers.

It is often the state which abrogates the authority to "manage" natural resources - this is particularly the case for forest resources in many Sahelian countries. Alternatively, the state may effectively eliminate the possibility of decentralised natural resource management by not recognising the legal status of local institutions.

- The case studies examined for Burkina Faso reveal the extent to which local groups have come to rely on state technical services (especially Water & Forestry) for NRM initiatives. Resource user groups, such as co-operatives, tend to have a low capacity to manage natural resources on their own and rely heavily on government services. At Cassou, for example, where local forest management groups cut firewood for Ouagadougou, most of the management functions are actually performed by project staff, not villagers. At Malou, groups of fishermen and fish sellers, created at the instigation of the local forestry service, remain "passive" with regard to opportunities for organising an effective fish-resource based enterprise in the area. Such groups seem to be following a "wait-and-see" policy, dependent upon local forestry officers to suggest new measures and activities.

By denying asserting its primary role in NRM, the state creates, at best, a "free-for-all" situation because it is incapable of providing genuine management or, at worst, a situation within which its agents can extract profits in return for selling rights of access to resources.

Multiple user rights

Another reason why local control over access to relatively valuable resources may be problematic has to do with the particular characteristics of many Sahelian natural resources, the availability of many of which is highly variable in space and time. Such resources do not lend themselves to easy management, although they may be subject to regimes of reciprocal access.

- Jengelbé Fulani at Thiargny, in the Jolof area of Senegal have long considered the region to be theirs, do not deny other pastoral groups access to local rangelands. This system has been maintained, despite the fact that increasing numbers of highly mobile Fulani, known as "egge-egge" and their large flocks of sheep are putting heavy pressure on existing grazing. Outsider herders are now sometimes asked to camp in particular areas, at some distance from Jengelbé dry season sites, but the Fulani are very reluctant to consider a policy of excluding outsiders. This, they argue, would be risky given that they too, in certain years, need to have access to pastures outside of the Jolof - excluding others from their home area, it is thought, would eventually lead to their being excluded in their turn from access to grazing elsewhere.

- The harvesting of blue-green algae in waterholes has been a traditional and important income generating activity among Haddad women in the Lake Chad region. Access to such waterholes is not restricted to the women of the village within whose territory they are to be found - it is open to all Haddad women. This appears to be linked to the unpredictable nature of the algae: for a variety of reasons, it is impossible to know, from one year to the next, whether conditions in a given waterhole will be right for the algae to reproduce themselves in sufficient quantities. Under such circumstances, a system of exclusive access would result in women from a particular village only harvesting algae in certain years (from their waterhole) rather than being able to do so in most years.

Such ease of access does not mean that there are no rules about the way in which the resources are to be used, but that those rules do not seek to preclude outsider access. It can be seen that some form of local management system is likely to emerge when resources are valuable enough to warrant the exercise of control over access, and when local institutions are able and allowed to exercise sufficient authority over resource users.

Elements of successful DNRM

The case studies of DNRM in the Sahel reveal not only the conditions under which it does develop but also some of the key components which make it successful.

Levels of participation

Successful DNRM tends to be associated with a high degree of popular participation. Where local resource users are able to make their views known, can influence the decision-making process, and feel that their interests are sufficiently represented, they are more likely to conform to NRM rules. The possibility of resource users being able to play an active role in local level NRM clearly confers a high degree of legitimacy to rules.

- In its efforts to protect "kad" (Acacia albida) and other trees in Koulouck (Senegal), UGK initially decided to ban all cutting. Local forestry auxiliaries rigorously implemented this rule for the first year. However, following complaints made by women, it soon became apparent that a total ban on cutting was too demanding - women were finding it very difficult to collect sufficient amounts of firewood for cooking. The Union's committee thus decided to modify the rules, allowing women to cut wood from "kad" trees located in their family fields and permitting users to cut Guiera senegalensis during field clearing. In addition, it was also decided that UGK include an improved woodstove component in its environmental protection program and employ women as forestry auxiliaries. The ability of women to participate, in a meaningful way, in rule-making has resulted in a much greater degree of acceptance of local rules than might otherwise be the case.

It is important to note that "true participation" goes well beyond the involvement of local resource users as suppliers of labour or in being consulted from time to time. It implies the capacity to be directly involved in the process of decision-making, such as by subjecting rules to scrutiny and, in the event that they prove too unpopular, forcing their modification.

An extension to the question of participation is the issue of "inclusion". This is particularly important within the context of multi-ethnic situations or mobile resource users. When outsiders are consistently included in the process of NRM, there is likely to be a much higher chance of success; where outsiders are excluded, the opposite holds true.

• The way in which local management of artisanal fisheries at Kayar in Senegal allows for outsider fishermen to be involved provides a good example of DNRM. Kayar is used on a seasonal basis by a large number of Guet Ndarien fishermen from Saint Louis, as well as by local Lebou. Rather than risk alienating this regular but nonetheless "stranger" community, the CPC has deliberately sought to involve them in fisheries management - the CPC's membership is drawn from both communities, even though its original *raison d'être* - the competition between bed net fishing, dominated by the Guet Ndariens, and line fishing - might have been a cause for exclusion. In its activities, the CPC always consults leaders of the Saint Louisian community in Kayar. Similarly, the CSKSL ("Comité de Solidarité Kayar/Saint Louis"), which deals with purse seine fishing and any conflicts between fishermen, is made up of equal numbers of Kayarois and Guet Ndariens; indeed, its very name epitomises the inclusive way in which NRM takes place in Kayar.

Transparency of management

Successful DNRM tends to be associated with transparent processes. People are more likely to stick to the rules where they know how rules are made, what the rules are, who is allowed to do what, and so on. Where they pay taxes and know how the revenues thus generated are used, resource users are more likely to continue compliance. Where such transparency is absent, the opposite holds true.

• At Kayar in Senegal, both the CPC (for line fishermen) and the CSKSL (for purse seine fishermen) inflict substantial fines (50,000 CFA franc) on those who do not abide by local rules about fishing zones and allowable catches. In addition, the CPC also levies a daily tax on all line fishermen. In both cases, there are few examples of fishermen refusing to pay. This is partly because both organisations appear to be well managed and present their accounts to their membership in a clear way. In addition, the revenues generated by fines and taxes are used to provide fishermen with services (such as rescue in the event of a storm, credit, ...). In the case of the CPC it is hoped that they will one day finance the installation of a large electric light on the beach to make night-time fishing less dangerous.

• During the gum arabic boom, the chief of Abougern canton at Dourbali (in Chad) decided to institute a tax on gum harvesters, at a rate of 10,000 CFA francs per harvester per annum. The tax was intended to finance both the functioning of the cantonal committee for resolving gum arabic-related

conflicts and investments in local service infrastructure (an annex to the hospital, classrooms, etc.). This gum tax was badly administered - money was pocketed, revenues were mixed up with overall fiscal revenues to the canton, and expenditure was clearly much less than revenue (only the hospital annex, a modest building constructed with mud bricks ever being funded). As a result of this mismanagement, local gum harvesters became increasingly reluctant to pay the tax and ceased doing so as the market price of gum arabic dropped.

Transparency requires that information is available in a form which allows resource users to understand what is happening. For financial matters, it requires that there be some kind of accounting system and requires that affairs be conducted in public (precisely the great strength of Kayar), where people can see what is happening.

Adequate monitoring

Successful DNRM depends on there being adequate monitoring of resource users. There is no point in having rules about resource use if compliance is not monitored and enforced. Best practice here is for resource users themselves to be the people who provide the monitoring.

- The Dogon village of Ibissa in north-central Mali has developed a complex and intensive system of irrigation for market gardening, using water from a natural spring and based on a network of principal and secondary canals. Each of the five secondary canals provides water for a group of gardeners, who are allowed access to water by strict rotation. Compliance with the rotation system is monitored by those gardeners waiting for their turn to irrigate - as soon as it is their turn, they will stop others from continuing to irrigate. This system of monitoring by resource users themselves appears to result in a strict application of local rules.

Where monitoring is inadequate, there is a much higher chance that some people profit at the expense of others, which results in the entire system gradually breaking down.

- In order to finance the deepening of its waterhole and the construction of a small dam to collect more runoff water, the village of Nagnassoni in southern Mali obtained a grant from the FIL in Sikasso. Under the conditions of this grant, the village is expected to build up a fund, equivalent to the value of the work undertaken, over a period of years. To

do this, the village has developed a system of annual water-user fees, paid on the basis of the number of livestock owned by each family. So far, the fees have been paid. However, there is no regular monitoring of whose livestock are being watered at the waterhole. Outsiders are able to water their animals there, but are not subject to user fees. At some stage, unless adequate monitoring is introduced, villagers will begin to ask themselves why they have to pay user fees while others do not. Once this happens, it is likely that local herd owners will start refusing to pay their annual fee.

Financial autonomy and financial resources

DNRM often implies the need for money to pay for management costs and the like. The ability of local level managers to raise funds is therefore often an important factor in determining the success of NRM.

- The various case studies reveal many examples where financial revenues can be generated at local level. At Nagpassoni, in southern Mali, for example, local communities have been able to implement a water-user fee in order to finance the replacement costs of improving their waterhole. At Kayar, on the Senegalese coast, local fishermen collect a daily fishing tax and fine rule violators, both mechanisms generating revenues with which to finance services and management costs. In Dourbali, Chad the canton chief was able to raise taxes from gum arabic harvesters, which were used to finance, among other things, the running costs of the cantonal committee responsible for dealing with conflicts related to gum arabic harvesting. At Cassou, in Burkina, forest management groups are able to tax wood cutting in order to meet the costs of managing and improving local forestry resources.

However, where local level NRM is dependent on external sources of finance, it can be compromised.

- In Beregadougou, Burkina, SOCABE (a local agricultural co-operative) began a program of protecting riverbanks along the Berega and Yannon rivers. Early work concerned the promotion of suitable techniques, such as alley cropping. In 1992, SOCABE's initiatives were formalised into a project, which received funding from a UN agency. This external funding allowed SOCABE to take on employees and contract services. However, due to poor financial management on the part of SOCABE, funding was cut a year later. As a result, project activities have ceased completely.

In general, however, few local management systems in the Sahel have access to significant amounts of funding to invest in natural resource improvements which can seriously handicap local management initiatives. However, it is possible to provide decentralised institutions with access to forms of credit, which can be used to invest in resource improvement. Credit is better than are subsidies, if only because it encourages some thought about sustainability.

- As part of a larger program of support for village land management in the Sikasso region of Mali, the FIL project has developed an innovative way of providing communities such as Nagnassoni with access to the funds they need in order to pay for upgrading local natural resources. Here, for example, the FIL project made available some 12 million CFA francs for the construction of a small dam and the deepening of a waterhole, the village itself contributing 0.5 million CFA. Although this was not, strictly speaking, a loan, Nagnassoni is expected to "repay" some 2.4 million CFA francs to an inter-village development fund and (over a period of 20 years) to build up a "write-off" fund of 12.5 million CFA francs.

Conflict resolution and management mechanisms

There are inevitably going to be conflicts between and among resource users. Good DNRM systems need to develop a capacity for resolving conflicts in such a way which prevents them escalating or threatening the overall scheme of things.

- The supra-village level association (Waldé Kelka) created by 13 villages in the Kelka was established in order to resolve conflicts related to natural resource management. Part of its mandate is to "keep the peace". The association is managed by an executive committee of 15 members, each village having at least one representative; the committee is elected at annual general meetings, to which each village sends three voting delegates. Five of the committee's members are conflict mediators, who can be asked by Waldé Kelka's president to intervene in the case of a conflict between association members or between them and others. If the mediators fail to resolve the problem, the entire executive committee of the association can attempt to intervene. As a last resort, a general meeting can be called, at which village delegates can try to mediate. Since being established in 1992, Waldé Kelka has intervened in half a dozen conflicts, most of them related to problems about the boundaries of member villages and the cutting of firewood. In most cases, the association has succeeded in proposing solutions acceptable to those in dispute.

These local mechanisms for conflict management must also be transparent and encourage participation. Where resource users feel that they have no input into conflict resolution or that existing mechanisms are not subject to scrutiny, they lose legitimacy and become less effective.

- As a result of increasing levels of conflict over access to gum arabic trees the canton chief of Abougern at Dourbali, Chad set up, in 1987-88, a cantonal committee to arbitrate in any conflicts which had proved too serious for village chiefs to resolve. Made up of local notables, all designated by the canton chief (and not chosen by villagers), this committee was to prove controversial. Because the cantonal committee operated "behind closed doors" unsatisfied litigants were always able to accuse its members of being corrupt. Nor was it possible for committee members to be changed as a result of any accusations. The committee was eventually disbanded in 1990. Its successor, set up by the administration in 1992-93, also operated in an unclear way and has been ineffective in resolving gum arabic-related conflicts.

Knowledge and skills

The quality of local level NRM tends to rise in proportion to levels of knowledge and skills available. In many cases, rural populations already know a great deal about the natural resources upon which they depend for much of their livelihoods. But there are inevitably areas within which their knowledge can be increased.

- In the central arrondissement of Kita, in Mali, local villagers have been able to acquire new forestry skills through their participation in the management of gazetted forests. Selective cutting and thinning, in particular, are seen by them as innovative techniques for sustainably managing local forests. These skills have proved useful as villagers have gradually asserted control over the supply of firewood to Kita and, with support from the ILO project, begun to develop forest management plans as a consequence.

There is also the question of the skills needed for managing public finances related to DNRM. Although clearly linked to considerations of transparent management, it nonetheless stands on its own, as a set of skills needed to enable records to be kept and for keeping abreast of all financial transactions.

- The absence of well-kept accounts - and the problems this poses for local level NRM - was noted in several case studies. At Nagnassoni (Mali), for example, the collection of water-user fees is recorded in a highly disorganised way, making it difficult for local managers to know how much has been paid by each villager. The same applies to Thiargny, in the Senegalese pastoral zone, where the borehole management committee's records of water-user fee payments are of very low quality. There, it is very difficult to know who has paid what - with the result that increasing numbers of Jengelbé herders refuse to pay for the water consumed by their livestock.

It is unlikely that local resource management institutions will have all the information and skills needed, so they must necessarily turn to outside specialists for certain needs. Where those who deliver such information and skills have a clear economic interest in the quality of the service provided and can be held accountable to those being served, quality is likely to improve.

- In Dourbali, during the Chadian gum arabic boom of the 1980s and 1990s, traders/exporters from N'Djaména were involved in providing local gum harvesters with training aimed at improving the quality of the gum produced and at ensuring a sustainable and long term supply of gum. Several training workshops were organised at Dourbali by traders, who were clearly motivated to ensure as high a quality of gum arabic as possible, as well as an enduring supply. By all accounts, the techniques taught were precisely those which would allow for sustained gum harvesting. This is in contrast to the local forestry service which has rarely provided gum harvesters with technical advice on gum arabic bleeding and harvesting.

The right functions at each level

Successful local level NRM also seems to be associated with a nesting of structures within a hierarchy, with different management functions being carried out at different levels. Implicit in this is usually a tacit commitment to the principle of subsidiarity, whereby as many functions as possible are carried out by as low a level as possible. Only when certain functions are *either logically beyond smaller management units or require more resources than a village-based organisation can mobilise*, are larger NRM jurisdictions created.

- The clearest case of this is seen in the Kelka, in north-central Mali. There, villages are autonomous with regard to the elaboration of rules about forest use within their respective territories. This is in recognition of land tenure rights and the capacity of villages to enforce rules within their territories. However, at a supra-village level, certain functions have been assigned to Waldé Kelka (which brings together all thirteen villages located in or around the forest) - notably the resolution of conflicts between member-villages and between them and other user groups, and ensuring that all member-villages respect domestic use rights and the right of livestock to cross their territories.

Summary

The principal preconditions and features of successful decentralised natural resource management are summarised in the following box:

Preconditions for DNRM:

- **Valued natural resources**, justifying local investments in management.
- **An enabling environment**, within which local level NRM jurisdictions are able to exercise authority and make rules about resource use.

Features of successful DNRM:

- **A high degree of resource user participation in NRM**, such that a maximum of users has the possibility of being actively involved in rule-making procedures and in influencing decision-making.
- **A high degree of transparency in management**, such that resource users know what local rules are, how they are made, how financial resources are managed.
- **Adequate monitoring**, such that NRM jurisdictions monitor compliance, identify rule-breakers and assess the evolution of their natural resources.
- **Financial autonomy and access to money**, such that resource use can be taxed to fund the costs of management.
- **Transparent and legitimate conflict resolution mechanisms**, such that disputes are managed within the system in a timely and acceptable manner.
- **Sufficient knowledge and skills**, such that natural resource managers can pursue sustainable policies/practices and maintain adequate records.
- **Differing scales of operation**, such that management functions are ascribed to appropriate levels for implementation.

FACILITATING DECENTRALISED NATURAL RESOURCE MANAGEMENT

An enabling environment

Increasing the value of natural resources

As human populations grow, especially in urban areas, there will be an ever-increasing demand for a variety of rural products. This rise in demand is likely to make natural resources more valuable and thus increase local interest in their active management. However, their increasing value may also result in some people wanting to profit from them. What measures could complement *this process of increasing scarcity and value?*

Sahelian states should try not to tax too heavily the use and marketing of natural resources, as doing so will cut down the degree of profitability and reduce the scope for local revenue raising activities. However, if some kind of taxes are necessary, they should be implemented progressively so as to encourage local management. For products where there is an international demand (e.g. gum arabic, shea nut butter, fish) the state should make export procedures as simple and inexpensive as possible in an effort to maximise returns from these opportunities to producers.

Permitting local authorities to manage natural resources

In the past, Sahelian states have often refused to sanction the powers of local level structures by upholding the pre-eminence of their own national prerogatives. This is now starting to change, but there remain significant areas where little progress has yet been made, particularly within the field of forest and water resources. It is time for Sahelian states to reform their land and forestry codes, and make local level pre-eminence in land tenure and resource management an unequivocal fully legal right. This would bring the law into line with their own rhetoric about decentralisation and popular participation. In Senegal, for example, it is the *communautés rurales* which have been responsible for managing land tenure since the 1970s, while in Mali, it is proposed that land tenure functions be transferred to the new *communes rurales*. In both cases, however, there is need for still further reform, particularly regarding the national forestry codes.

The crucial question concerns to which local level structure land tenure and resource management powers should be legally devolved by the state. In Mali, for example, there has been much criticism of the proposal to transfer such

powers to rural communes, rather than to villages, which are seen as a more appropriate level for many of the functions related to natural resource management. Those in favour of the proposal argue that only the communes have the legal status necessary for such devolution to take place. In addition, it is argued, many resource management units need to be considerably larger than the typical village's territory.

Ideally, the state should devolve its tenurial powers to user-governed structures, constituted in order to manage a given resource. Thus, if the villages in a particular watershed decide that they want to establish a common group for managing soil conservation, the state should devolve necessary powers to that management unit. This is to argue for the recognition of special purpose structures, which can be established as and when the need arises and designed for the purpose in question.

There is a pressing need for the state to divest itself of its legal tenurial responsibilities, but if one were to recommend that it does so only once special purpose jurisdictions emerge, it is likely to be a very long time indeed before a significant proportion of, say, forest land is handed over to local management groups. In such circumstances, the "best bet" may be a compromise. The state could devolve the vast majority of its resource management powers to the lowest level of local government¹, with the crucial proviso that these can further devolve such powers as and when they see fit (by legislating bye-laws). In other words, structures like Mali's rural communes would subsequently be able to pass on their powers over, say, forests to single purpose structures. The power to devolve such authority should include the possibility of several units of local government coming together in order to create larger level structures for managing natural resources which cover more than one local government area.

This option has pragmatic virtues. Firstly, it does not require much new legislation - lower level territorial collectivities have already been legislated for, and all that is needed is a transfer of land tenure rights. Secondly, there is a much greater chance that lower level NRM units (such as villages or federations of forest users) will be able to exercise some kind of influence over the local government units of which they are a part than they do over the central state, which is inevitably more distant. Thirdly, it is often the case that local leaders are more aware of their limitations than are their counterparts at

¹ *Communautés rurales* in Senegal, *communes rurales* in Mali, *communautés rurales* in Chad, and so on.

national level, and may therefore be more willing to apply the principle of subsidiarity, further devolving the authority to manage NRM.

However, this option runs the risk that local government will not want to devolve such powers to lower levels. This option also raises the question of the juridical status of special purpose or smaller units to which local governments might devolve NRM prerogatives. How does one "legalise" a village so that it can manage its lands? How does one "legalise" a federation of villages so that it can manage a shared watershed? There are no simple answers here - but it can only be recommended that the solution be as pragmatic as possible. What is needed are easily applicable, low cost, "common sense" measures.

Improving decentralised natural resource management

Increasing participation

Measures aimed at increasing the degree of participation within decentralised NRM institutions need to go beyond traditional approaches, such as "animation" and "sensibilisation". There are two complementary possibilities.

The first would be to make it mandatory for local level NRM institutions to be organised along democratic lines, with office-holders being elected for fixed terms. This would encourage a degree of accountability and permit resource users to voice their concerns through choice of their representative. However, while some of the customary institutions which exercise authority in the Sahel are not always very participatory, many remain accountable - in some way or other - to local populations and resource users. Should such institutions be automatically excluded from DNRM, because they are not sufficiently "democratic"? Legislating for "democratic" NRM jurisdictions also has its limits. In theory, all the co-operatives established in Mali are run on democratic lines - but as all Malians probably know, this "legal" truth is far removed from the everyday reality of such co-operatives. Despite these, and other problems it remains clear that we should seek to encourage local level NRM jurisdictions which allow for a maximum of public choice, within which resource users can find their voice.

The second option is to provide members of local NRM jurisdictions with training in participatory methods, thereby enabling them to facilitate more effective consultation with resource users. An obvious starting point here

would be to introduce PRA/LA techniques² into local institutions, for which there is already a training capacity in the Sahel, particularly among NGOs. The success of such a strategy, obviously, depends on the extent to which tools aimed at enhancing participation are genuinely used by those trained.

Increasing the extent to which management is transparent

While the "democratic" organisation of local NRM institutions would certainly encourage a degree of accountability, there is still a need for providing the basic tools necessary for allowing transparent management. This could take a variety of forms - training in clear accounting procedures so as to render visible systems of financial management; training in how to design procedures for decision-making; training in the keeping of records about meetings and decision-making processes; training in the programming and presentation of activities. At a more basic level, there is much work to be done in the field of adult education, in providing rural people with essential skills in literacy and numeracy. This is relatively simple, but labour intensive work. It is also something to which everybody - the state, donors, NGOs - can contribute and which would yield benefits in a variety of fields, not just NRM.

Increasing knowledge about NRM and improving management skills

In order to increase the knowledge and skills of local NR managers, measures should be taken to provide them with access to appropriate information - whether technical or otherwise. As far as possible, this should be through a process of exchange visits between those responsible for local level NRM systems, enabling rural people to see how others are dealing with resource management problems and discussing issues with them. There are, of course, other ways of providing resource users with new information about NRM. Various media, for example, could be used to do this. Training workshops could also be organised. Finally, there is a need to widen the range of service providers to local level natural resource managers. Projects should consciously endeavour to involve private sector enterprises as contractors to local NRM institutions, while the state should ensure that the fiscal environment is favourable to such enterprises. The greater the degree of choice open to managers of natural resources, the more likely it is that they will obtain the quality of service they need.

² This has been done, with some success, in Ghana, where a GTZ-Government of Ghana program of support for decentralisation has provided elected District Assembly persons with training in the use of PRA techniques.

Improving local mechanisms for conflict management

Natural resource exploitation is often competitive and conflicts between resource users is an ever-present risk. Conflict resolution is best achieved at a local level, provided that it is carried out in a readily transparent manner and conducted by arbitrators whose impartiality is manifest. Such mechanisms must therefore be put into place or, in the event that they already exist, supported. Local level NRM structures should be actively encouraged to establish transparent conflict resolution systems, both at their own level and above. Lines of recourse need to be spelled out in a clear way, with parties to a conflict being strongly discouraged from taking their problems "out of the system". State judiciaries and administrative authorities will need to strengthen the legitimacy of local level dispute settlement methods by recognising the binding nature of their decisions and insisting that resource users appeal to the courts only in the last resort.

Improving the mobilisation of financial resources at the local level

Local level NRM institutions must be allowed and encouraged to raise financial resources through their own fiscal mechanisms. As a prelude to this, and as an integral element of the state withdrawing from tenorial pre-eminence, the state needs to devolve many of its fiscal prerogatives to decentralised levels. When local government devolves legal control over natural resources to other structures, they must also devolve any corresponding fiscal authority.

The state and donors must be very careful not to subsidise DNRM by allocating large amounts of funding to local institutions. For example, providing forest management bodies with funds to cover running and investment costs runs the risk of the local organisation becoming more accountable to donors than to the resource users it represents. It will also reduce the incentives to develop low cost, sustainable solutions to problems. External funding, if it is to be provided for direct NRM activities, should be on a "matching funds" basis, with local resource users contributing at least as much as outside donors, or through forms of credit (similar to those developed by the FIL project in southern Mali). Donors, however, can very usefully contribute resources to institutional support - training, exchange visits, legal reform, and the like.

THE ISSUE OF DECENTRALISATION

In this final section we turn to an examination of reforms currently underway and an analysis of policies on decentralisation and their limits in some of the CILSS member states.

Processes of reform in the Sahel

Most Sahelian countries are undertaking reforms which will result in a greater degree of administrative decentralisation. In some countries, such as Senegal, this process began early on; in others, particularly those where democratisation has been more recent (Mali, Niger), new laws concerning decentralisation have only been drafted since the 1990s. In certain countries (Chad, Burkina) the state is still in the process of drafting laws and initiating reform. In some countries (Chad, Mali), a decentralised system of governance is constitutionally mandated; in others, it is not. Alongside local government units, most Sahelian states have also proposed to establish a devolved system for technical services, accountable both to local and central governments. For the moment, however, most such technical services continue to operate as centrally-managed line ministries, even in Senegal.

In terms of fiscal powers, Sahelian local government structures enjoy limited authority. Most are (or will be) able to raise local development taxes on a per capita basis. They are also able to raise taxes through commercial patents and trading permits. However, in most cases the levels of permissible taxation are controlled by national legislation. In most countries, there are proposals to establish a central fund for local government, made available to local communes according to a variety of criteria; for the moment, however, there are no significant flows of financial resources from central to local government.

With regard to land tenure and resource access, the role of communes is somewhat ambiguous. In Senegal, for example, rural communities are empowered to manage a significant proportion of the national domain - it is they, in most cases, who allocate agricultural land to farmers. However, forested lands in Senegal remain very firmly under the control of the forestry service, whose role is mandated by the national forestry code. Elsewhere, it is still too early to know precisely what role local government will play in land tenure and resource access.

At the same time as setting up rural communes, many Sahelian countries have also embraced the AGT (aménagement/gestion de terroirs) approach which is based on the notion of village level management of land. Within the forestry sector, ever since ground-breaking experimentation in Niger, there has also been an increased interest in local level management of woodlands. Major reforms of domestic energy policy, pioneered in Niger, now adopted elsewhere, strongly argue in favour of village level management of fuelwood resources and supply.

In short, there does appear to have been a change in the political thinking of Sahelian states. All have committed themselves to decentralising their administrative structure to varying degrees, to enable a greater degree of popular participation in the process of local government. All have recognised that the post-independence model of centrally managed territorial administration is out-of-date and inappropriate. Most have adopted a developmental rhetoric which is in favour of decentralised natural resource management of some kind.

However, the extent to which rhetoric has been transformed into real practice remains somewhat limited. First, and perhaps inevitably, reforms seem to take a long time to be implemented. Second, and more significantly, the substantive meaning of much political rhetoric has often been heavily diluted by the time it becomes legal prescription, let alone practical implementation. This has been especially the case with forestry legislation: initial, upbeat pronouncements concerning the decentralised and participatory orientation of "new" forestry laws have been belied by the codes eventually adopted by parliaments, which continue to bear a strikingly close resemblance to the codes they replace.

Obstacles and constraints

In the first part of this paper, we spelt out the basic preconditions for DNRM and some of the features which contribute to making it successful. In addition, a number of measures have been proposed which, if adopted, would go a considerable way towards fostering the emergence of local level NRM structures and increasing the likelihood of their succeeding. Many of these proposals have been made before. Not all of them, however, have been adopted in a thoroughgoing manner by national decision-makers in Sahelian countries, despite their apparent commitment to the process of decentralisation

in general. And even where there have been reforms, the process of decentralising natural resource management has been slow.

There are also significant differences in the way in which different Sahelian countries have gone about fostering and supporting decentralisation, in general, and DNRM, in particular. Indeed, it seems increasingly obvious that despite a homogeneous rhetoric, Sahelian states demonstrate a remarkable heterogeneity in the extent to which they have set about decentralisation. A number of factors seem to underlie an inability to implement the necessary measures. In addition there are a number of intrinsic constraints which need to be taken into account when discussing the process of decentralisation in the Sahel.

Legislative processes and legal traditions

In creating an enabling environment for DNRM, within which the state legally cedes its authority over tenurial issues, there are clearly obstacles related to legislative process and legal traditions.

First, it needs to be remembered that the Sahel comprises large, sparsely settled poor countries, governed by young states, few of which have access to significant financial resources. These are not countries where laws are easily enforceable. Laws are written in a language entirely alien to the overwhelming majority of rural people, and in a style beyond the ready understanding of most educated lay people. The fact that most national land tenure laws have remained unapplied for the last thirty or more years outside the main towns is witness to the limits of legislation in the Sahel.

Nonetheless, most observers would tend to agree that existing laws are usually insufficiently "liberal" with regard to the creation of local level NRM jurisdictions. What are needed are constitutional-type laws that stipulate, in a broad way, what the state is allowed to do. The state needs to move away from trying to decide what is to happen to all natural resources and firmly declare that in all but a few cases, NRM is a local affair. This would not only bring legislation into line with reality, but also reduce the very equivocal way in which existing local institutions manage resources.

Two other aspects of the Sahel's legal inheritance also seem especially inimical to decentralised NRM. Firstly, laws always apply throughout a country, regardless of how many differences there might be between regions. It would make more sense to have one legal framework setting out in a broad

but unambiguous fashion what national forestry policy is, juxtaposed with a series of local or regional forest codes, drawn up by different forest users. Secondly, laws always tend to be exhaustive³. Everything is legislated and codified. And yet, all these points of detail are only likely to be observed in the breach, rather than as a rule. In addition, it is clear that such an omniscient approach to making laws is intrinsically anti-local and inflexible, the opposite of the iterative, precedential, and flexible attitude necessary for legislation in the Sahel.

A continuing mistrust of local capacities and lack of support for organisational development

The emergence of an enabling environment supportive of DNRM has also been held up by a sustained mistrust in the capacity of local level institutions and groups to manage natural resources on the part of the state apparatus. The vast majority of Sahelian administrators and technical personnel are unwilling to move beyond the rhetoric in favour of decentralisation and remain committed in practice to a "hands-on" approach. This general mistrust of local capacity to manage resources is also brought out in the tendency for Sahelian states to create an excessive number of hurdles over which organisations must jump in order to be granted the right to manage their own resources. For example, for villages in most Sahelian countries to be allowed to manage community forests, they must engage in a protracted process of negotiation with the state and agree to a multitude of clauses and conditions (many of which were never adhered to by the forestry service itself).

While devolving powers and responsibilities requires some caution, too much red-tape substantially raises the transaction costs, and can thus inhibit the emergence of local level institutions. At the same time as local capacity to undertake NRM is belittled, too little effort is made to strengthen systematically local capacity to practice NRM. State-sponsored training programs which set out to provide rural people with the skills and knowledge they need to manage natural resources are few and far between. Some AGT projects provide villagers with new technical skills, but many amount to little more than technical service personnel drawing up village development plans and "schémas d'aménagement".

³ An example which comes to mind is the tendency for Sahelian laws on administrative decentralisation which go into unnecessary, and often counter-productive detail on what rural communes or communities will be allowed to tax.

Reluctance to give up "rent-seeking" opportunities

Genuine devolution of NRM to local level institutions will necessarily imply a decline in the capacity of the state and its employees to extract rents from resource use. The importance of natural resource rents should not be underestimated for poorly paid civil servants. This helps explain the reluctance of the state apparatus to hand over powers to manage resources to local level institutions.

A reluctance to devolve real political power to the local level

There has been a major change in Sahelian states' overt commitment to democratisation and decentralisation. But we must be realistic in assessing the extent to which national governments are genuinely willing to share political power through the democratic process. Some countries, such as Senegal and Mali, demonstrate a strong commitment to the overall process of democratisation and decentralisation. Other countries, on the other hand, have historically belonged to a rather different political tradition, in which all sources of political power are seen to be potentially threatening and thus need to be "contained".

Weak local capacity to manage resources

In some Sahelian countries local capacity to undertake NRM is made more problematic by the way in which local sources of authority have been systematically eroded away over time. The contrast in the post-colonial political histories of Mali, on the one hand, and of Niger and Burkina, on the other, is striking in this respect. In the former case, central government has never entirely excluded local initiatives and the exercise of local authority - it is too large and diverse a country for this to have happened given the technology available to the state. As a result, a tradition of DNRM in Mali has "survived", and local capacity to make decisions about resource management has remained remarkably intact. In Burkina, on the other hand, the exercise of central control over the entire country has been a political tenet of successive regimes and, given the relatively small size of the country, a practical possibility. Niger is an immense country, but is different from Mali in having been ruled, for a formative period in its history, by a strong leader, who was fortunate enough to have enjoyed access to important financial resources derived from uranium mining. As a result, Niger experienced a prolonged period of strong central control by the state, and a concomitant weakening of local level institutions.

Local resistance to participatory institutions

It is not just the state apparatus which may lose out in the process of decentralisation. There may also be local élites who have much to lose if NRM becomes increasingly participatory. The most prominent case of this in the Sahel is in Chad, where customary chiefs have enjoyed considerable power for a long period of time, derived in part from their control over access to natural resources. Elsewhere in the Sahel there are also other cases of powerful vested interests at the local level which would certainly not benefit from a more open, participatory style of NRM.

Limited dependence on natural resources

Population growth and increasing urban demand are likely to raise the value of natural resources. However, in many places, people are not solely dependent on natural resources as the basis for their livelihoods - many Sahelians also rely on income derived from migration to the relatively prosperous coastal and southern countries, particularly Côte d'Ivoire and Nigeria. Reliance by many Sahelians on incomes from other sources may have the effect of devaluing the relative importance of natural resources and thus reducing the likelihood of local investment in their sustainable management.

Inappropriate donor practices & policies

Many donor agencies continue to operate in ways which do not support decentralised natural resource management. The incentive structures within many agencies are such that their personnel are often motivated to dispense large sums of money in relatively short spaces of time. This has the unfortunate effect of focusing much assistance on concrete activities, such as infrastructural investments, for which expenditure is high and the results highly visible. Equally, funds are "dumped" on projects which cannot possibly spend them in an effective manner. Such tendencies go against the grain of building up local capacity and accountability. Few donors are able to "open their doors" to the small scale, timely, and incremental assistance so often appropriate to DNRM. The transaction costs of negotiating, for example, a three-year literacy training program for a village-based NRM organisation are usually so high as to be prohibitive for major donors. Thus, slow-moving and low profile interventions (in non-formal education, in information dissemination, in rural training) are militated against by donor policies - even though these are precisely the kinds of activity needed to foster local level capacities.

CONCLUSIONS

As many of the case studies examined by this study have shown, there are encouraging examples of decentralised natural resource management in the Sahel. Some of these show that not only can local level NRM occur but it can also be relatively successful, given the right circumstances. The entire set of case studies provides many clues as to what allows DNRM to develop and aspects crucial for its success. By the same token, we can also identify factors which militate against successful DNRM.

From this analysis, it is possible to identify the kind of policy environment and direct interventions which might foster more and better DNRM. While some of these reforms have taken place, there are many which have not. There are numerous reasons for this outlined above, which combine with the inherently slow speed at which change takes place. Some of the factors which explain the slow pace of reform can be overcome with sufficient political will; others, however, are constraints with which rural populations will have to live.

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The Drylands Programme aims to contribute towards more effective and equitable management of natural resources in semi-arid Africa. It has built up a diverse pattern of collaboration with many organisations. It has a particular focus on soil conservation and nutrient management, pastoral development, land tenure and resource access. Key objectives of the programme are to: strengthen communication between English and French speaking parts of Africa; support the development of an effective research and NGO sector; and promote locally-based management of resources, build on local skills, encourage participation and provide firmer rights to local users.

It does this through four main activities: collaborative research, training in participatory methods, information networking and policy advice to donor organisations.

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ISSN 1357 9312