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**DECENTRALIZED NATURAL RESOURCE MANAGEMENT IN
THE REPUBLIC OF MALI:
SUMMARY OF CASE STUDIES AND GENERAL CONCLUSIONS**

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Abbreviations

AV	Association Villageoise/Village Association
BIT	Bureau International de Travail/International Labor Organization
CAAF	Contrat d'Approvisionnement et d'Aménagement Forestier/Forestry Management and Supply Contract
CAI	Comité d'Attribution Intervillageois/Inter-village Attribution Committee
CMDT	Compagnie Malienne de Développement des Textiles/Malian Textiles Development Corporation
DNRM	Decentralized Natural Resource Management
FIL	Fonds d'Investissement Local/Local Investment Fund
GIE	Groupement d'Intérêt Economique/Economic Interest Group
MDRE	Ministère du Développement Rural et de l'Environnement/Ministry of Rural Development and Environment
NEF	Near East Foundation
NGO	Non-Governmental Organization
PGT	Projet Gestion de Terroirs/Land Management Project (Sikasso)
SRFFH	Service des Ressources Forestières, Fauniques et Halieutiques/Forestry, Wildlife and Fisheries Service

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DECENTRALIZED NATURAL RESOURCE MANAGEMENT IN THE REPUBLIC OF MALI:
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1. Preamble

This report, written for member States of CILSS, provides a summary of four case studies of decentralized natural resource management (DNRM) in contemporary Mali¹. For each of the four case studies, this report provides background information, a brief narrative description of local level management practices, and a critical appraisal of their strengths and weaknesses.

The second part of this report provides a brief overview of the decentralization process in Mali, looked at from both "above" and "below". Within that overall context, the report then sets out - in the light of the four case studies - to identify the principal constraints to DNRM in Mali. A final section of the report then contains a number of recommendations intended to facilitate effective DNRM.

2. Case study summaries

2.1. Ibissa's natural spring: the capacities and limits of village-level management

2.1.1. Background

The management of Ibissa's natural spring, and the irrigation system dependent on it, is an entirely "local" initiative, dating back at least a century. No outside agency - state or otherwise - has had any impact on either spring water or horticultural management in the village.

Ibissa, situated in a valley of the northern escarpment of the Bandiagara plateau, is a long-established Dogon community of the arrondissement of Boré (in Douentza Cercle). According to local oral history, the village was founded several centuries ago by a migrant - named Sananguliya - from the Mandé region (in contemporary southern Mali). The founder had three sons and a daughter. His sons were the ancestors of Ibissa's three main patrilineages - the Kogom (the seniors), the Balana, and the Tana (the juniors) - all of which nevertheless share the same family name, Koungoulba. Sananguliya's daughter married Samaseku, the founder's blacksmith-companion, from whom is descended the village's substantial

¹ for the full case studies report see La gestion décentralisée des ressources naturelles: le Mali: études de cas, Yamadou Diallo & Michael Winter (ARD Inc.), April 1996.

blacksmith family.

The village chiefship, currently held by a member of the Balana lineage, is rotative, passing from each patrilineage in turn. The lineage whose turn it is to hold the chiefship chooses an individual for office on the basis of his skills and qualities; once elected, an individual remains village chief until his death. The make-up of the village council also reflects a pre-occupation with balancing powers between lineages: the chief is assisted by only one member of his own lineage, but by two members from each of the other lineages. Parallel to this lineage structure there is also a system of age-groups, of which those including the able-bodied (i.e. males between 15 and 50 years old) constitute the sero, an important village institution which is represented on the village council by its designated leader.

Ibissa is a remarkably cohesive community, clearly capable of undertaking collective actions when and if they are decided upon. The construction of a high quality dirt road (in the 1960s) - linking the village to the main metalled road to the north - and its annual maintenance - by the sero, is witness to Ibissa's capacity to mobilize itself for collective works.

The village's economy is based on three principal agricultural activities:

- rainfed farming (mainly millet and sorghum) based on limited means of production, which has become less and less productive as a result of declining rainfall (currently 300-400 mm. per annum);
- livestock raising is of considerable importance in Ibissa, although most of the village's herds and flocks are pastured elsewhere, in the Inner Niger Delta or on the Seno plains;
- off-season market gardening, based on the intensive use of water from a permanent spring, allowing farmers to grow a substantial range of crops (tobacco, maize, onions, garlic, citrus) throughout the year.

Ibissa's own lands appear to be insufficient. Many villagers have had to borrow fields for rainfed farming from neighboring communities. In addition, the village is partially dependent on other communities' lands for forest products (timber, wild fruits and leaves).

2.1.2. Spring water management and market gardening production

The irrigation system at Ibissa is made up of five check dams built by the villagers in a single water course leading from the natural spring at the valley head. Each check dam diverts water into a principal canal (pono), which then channels it (on one or

both sides of the water course) to a series of secondary canals. Plots are irrigated using water from the secondary canals, lifted by using hand held gourds. In effect, the irrigation system consists of five sub-systems.

Whatever water is not consumed in the principal upstream canals eventually flows back into the main water course. Downstream canals, then, are supplied by this "excess" upstream water, as well as by overflows and "leakages" from upstream dams (which are not water-tight) and by subsidiary springs situated downstream in the main water course.

Because of high runoff and flooding during the wet season, the check dams are dismantled at the beginning of the rains. Unirrigated sorghum and millet are grown in the gardens during this period. After the harvest (October) the check dams are rebuilt and the canals cleaned out and maintained. All such infrastructural work is collectively carried out by all the members of each irrigation sub-system.

The spring is not managed in a ritual way, although the village makes sure that the resident crocodile (a common totem in Dogon society) remains undisturbed.

The rules regulating access to water for irrigation apply at the sub-system level - there are no rules concerning access to water by the five different sub-systems. Within each sub-system daytime access to water is organized on the basis of a three day rotation, the irrigators being divided up into three groups, each of which has a specified day for irrigation. Another three groups (downstream of the first three groups) irrigate at night, again on the basis of a three day rotation. When water is relatively abundant (October to January) this rotation system is fairly informal; but as and when water becomes scarcer (as the flow from the spring decreases and as more irrigators start farming), the rotation system becomes more strictly applied. Every irrigator monitors those before him to make sure that they stop watering when supposed to.

Between the five irrigation sub-systems, no rules govern access to water. The irrigator group of each sub-system waters as and when it wants. As a consequence, the downstream sub-systems obtain less water than those upstream. Downstream irrigators either "steal" water at night (by opening upstream dams) or ask upstream irrigators to release water for them. Despite water shortages (which have become increasingly serious in the last few years), the villagers manage to avoid major conflicts among themselves. These conflicts, however, are clearly latent at Ibissa, where downstream irrigators are at a consistent disadvantage compared to those upstream.

Market gardening in Ibissa has evolved over time. New, more

profitable crops (onions, garlic) have been introduced. Seasonal migrants returning from coastal countries and elsewhere have brought back new plants to test out, some with success (bananas, mangoes, citrus), while others have proved unsuitable (coffee, coconuts, kola). These changes to new crops have sometimes been relatively slow, often limited by technical factors (particularly a lack of seed).

2.1.3. Appraisal

Local level management of the spring at Ibissa reveals several significant features. Firstly, and most obviously, Ibissa shows that there is a genuine capacity to actively manage a natural resource of high value. At Ibissa it is also clear that villagers have a capacity to innovate, to experiment, to increase production and revenues. The irrigation system also exemplifies a local technical competence. The management of Ibissa's irrigation system also shows that villagers mobilize themselves on a regular basis (rebuilding dams and canals every year). Finally, despite latent conflicts concerning differential access to water, management is remarkably free of open conflicts.

Ibissa, on the other hand, also reveals some of the limits to local level management. There are clear limits to local technical competence: villagers are unaware of any method of sustaining or raising water flow from the spring (by building upstream water-harvesting structures). The irrigators of Ibissa are also limited in their capacity to mobilize financial resources, which could be usefully spent on cementing the canals (and thus reducing infiltration losses). There also appears to be a slowness in technical and institutional adaptations - lack of seed has slowed down the rate of adoption of garlic and onions, while no institutional mechanism has been set up to reduce the inequity in access to water and thus avoid conflict. Finally, the management of Ibissa's spring points to social capital (of which the village clearly has plenty) as being a crucial element in making up for any inequities in the irrigation system.

2.2. Kelka forest: village management of forestry resources and supra-village management of conflict

2.2.1. Background

The Kelka, located to the west of Douentza and to the north of the Bandiagara plateau, is an extensive plain which includes an important area of natural forest cover (approximately 45,000 hectares). The town of Mopti is about 100 kms. to the east of the area, easily accessible because of the metalled road which runs through the Kelka. The Kelka's forest includes considerable timber resources. The substantial quantities of dead wood are one of the main sources of firewood supply for Mopti-Sevaré, transported there

by lorry.

The 13 villages surrounding the forest are made up of several ethnic groups (Dogon, Bambara, Fulani, Soninké). Most villagers are agro-pastoralists, for the most part deficit cereal producers due to irregular and low rainfall. Some villagers are involved in the commercial cutting of dead wood.

Historically, forestry management in the Kelka has undergone several changes since the pre-colonial period. Local level pre-colonial management, conducted by village authorities, has progressively been displaced by a state land tenure monopoly. Central state authority and management, inefficient because of the state's weak presence on the ground, have severely compromised village level management. As a result the forest has not been genuinely managed for most of the post-independence era, despite the fact that cutting has significantly increased over the same period, especially since recent droughts and the construction of a metalled road between Mopti and Gao (in 1984). Following political upheaval in 1991 (and the crisis of state authority which followed), local communities - supported by an international NGO, NEF - decided, in 1992, to reestablish their tenurial authority over village lands. Since 1992, the Kelka has experienced not only a re-assertion of village level land and forest management, but also the emergence of a supra-village level conflict management institution, Waldé Kelka.

2.2.2. Village management of forestry resources

Village management of forestry resources consists of local rules and their implementation.

Rules for using forestry resources have, in most cases, been drawn up by village leaders and authorities. For the most part, village rules continue to be predominantly "traditional" in form, governing access to natural resources on village lands. Nevertheless, certain villages in the Kelka have drawn up new rules to cover commercial cutting of wood in their forest.

The majority of villages have drawn up rules for protecting live trees, fruit trees, and determining access to leaves and fruits. Among the tree species subject to the most controls are the baobab and boscia senegalensis, for which leaf and fruit harvesting (respectively) require authorization by village chiefs. Domestic (as opposed to commercial) cutting of live wood usually has to be authorized by village authorities; commercial cutting of live trees is, in all but one village, strictly banned. All villages have also ruled against the cutting of tree branches for browse.

Access to dead wood for domestic purposes is open in all the villages of the Kelka. Commercial cutting, however, is controlled by local villages in several different ways: either through the

purchase of an official cutting permit, issued to local village associations by the forestry service, coupled with village authorization, or through the payment of village "forestry taxes" (varying from one village to another).

The application of local rules is usually achieved by a system of regular "patrols", organized and carried out by villagers. When such patrols identify rule-breakers, the latter are immediately fined or, in certain cases, taken to the forestry service. Patrols are most intensive during the dry season; in the wet season, when villagers are out in their fields, monitoring is done by everybody.

This village level forest management has allowed villages to generate limited financial resources (from "taxes" and fines). Funds thus generated have, for the most part, been used to finance collective items (hand pump repairs, well-digging, ..) as well as to pay (in a few cases) for the costs of forest patrols. Re-investment in regenerative and more intensive forestry practices, however, has not occurred.

This village level forestry management has demonstrated itself to be relatively successful and efficient. By all accounts, local rules appear to have succeeded in reducing uncontrolled cutting and harvesting of forest resources. That local rules seem to be respected and heeded by forest users can be largely attributed to the high degree of legitimacy accorded to customary rules by most users (both locals and non-locals), as well as a genuine capacity to assure implementation on the part of local communities.

2.2.3. Waldé Kelka and conflict management

Created in 1992 by its 13 member villages, Waldé Kelka² is intended to manage conflicts related to DNRM. The association's general assembly consists of 3 delegates per village and chooses the executive committee (composed of 15 members, 5 of whom are conflict commissioners).

Members of Waldé Kelka recognize the association as having the functions of managing NRM conflicts between members and of managing conflicts which have gone beyond the capacity of village members. For the most part, Waldé Kelka is expected to fulfill these functions through a combination of mediation and reconciliation, and, under extreme circumstances, arbitration (which can only be done by the general assembly).

By its constitution, Waldé Kelka has limits to its conflict resolution role. Firstly, and most importantly, the association is

² in Fulfuldé "waldé" signifies "association" or "union"; Waldé Kelka became a legally recognized association ("association de droit privé") in August 1993.

not entitled to intervene in conflicts between its members unless one of them has explicitly requested Waldé Kelka's intervention or if both parties to a conflict accept its offer to intervene. Secondly, the association does not have the power to impose its decisions, either on non-members or members. Finally, Waldé Kelka is expected to collaborate with administrative and judicial authorities in the event that it fails to resolve a conflict.

If a village in conflict decides to ask Waldé Kelka to intervene, it addresses itself to the association's president. He, in his turn, will then contact the conflict commissioners, who will then try to mediate or to reconcile. If the commissioners fail to resolve the problem, the issue will be taken to the association's executive committee, which will either propose new solutions or support the propositions made by the commissioners. If the committee fails, the last resort is the association's general assembly. Should one or both of the villages in conflict refuse the general assembly's proposition, it or they can be reprimanded, suspended or expelled.

Since 1992 Waldé Kelka has managed a half dozen conflicts, sometimes with success, less frequently without. Of these conflicts three are of particular interest.

The Melo-Dogani conflict: a conflict which broke out in 1993 between Melo (a small Fulani village, member of Waldé Kelka) and Dogani (a large Dogon village on the plateau, non-member of the association). Several villagers from Dogani began preparing to farm on what Melo regarded as its lands; Melo therefore protested to the president of Waldé Kelka. The conflict commissioners were unable to find a solution to the problem, the villagers from Dogani insisting that the land was theirs and not Melo's. The executive committee then intervened, sending a delegation to Dogani itself to discuss the issue with the village chief and his counsellors. This strategy succeeded, Dogani recognizing that the land was, indeed, Melo's. Melo, for its part, decided to allow farmers from Dogani to settle on its land, provided they asked prior permission and acknowledged Melo's tenure rights.

The conflict between Pouti and a wood-cutter: Pouti (a Dogon community and member of Waldé Kelka) has lands which include rich forestry resources, the use of which is quite strictly controlled by village authorities. In 1993, a commercial woodcutter (a resident "stranger" in Batouma, a neighboring village) was discovered by Pouti's regular forest patrol to be cutting without having asked permission, without having paid the village tax, and without a legal cutting permit. The patrol - after the woodcutter refused to heed local rules - confiscated part of his wood. The woodcutter went to Boré (where he paid for a forestry service permit) and then returned to Pouti armed with his rifle to reclaim the confiscated wood. The villagers refuse to return the wood. The woodcutter then approached the forestry post in Boré, complaining

about Pouti's action. The forester contacted Batouma, which refused to intervene; later, he contacted Waldé Kelka. The conflict commissioners visited Pouti but were unable to resolve the problem because Pouti refused to accept their intervention (which it had not requested). The conflict eventually died down.

The conflict between Tibouki and Tété: both Tibouki and Tété are member villages of Waldé Kelka. Both are Dogon communities: they are neighbors and closely linked by marriage. Tété's village lands contain little forest cover, and woodcutters from there use forests situated elsewhere, including on Tibouki's lands. Access to dead wood on Tibouki's lands requires woodcutters to seek prior approval from village authorities and the payment of a local tax, as well as a forestry service cutting permit. In 1995, Tibouki's forest patrol found wood cut "illegally" - by a woodcutter from Tété - on village land; the patrol then confiscated the wood, transporting it to Tibouki. The woodcutter, with support from the authorities of Tété, complained to the forestry post at Boré. The forester, unable to find a solution to the problem, eventually summonsed Tibouki, which immediately contacted Waldé Kelka. The association, with the forester's agreement, tried to reconcile the two villages. At every stage (from commissioners to executive committee to general assembly), however, Tété refused to recognize its initial error (of cutting on another village's land without permission), insisting that the confiscated wood be simply returned. The association later sold the wood (for about 100.000 F CFA) in an attempt to "get rid of" the bone of contention. Later still, the association was to temporarily suspend Tété and to fine it (100.000 F CFA) for having refused to respect the principle of initial recourse to the association in the event of any conflict. The conflict eventually came to an end in early 1996, following the personal intervention of the regional director of the SRFFH: Tété apologized for its attitude and Waldé Kelka accepted the apology, promising to reconsider its decision to fine Tété.

2.2.4. Appraisal

At the village level local communities have shown themselves fully capable of drawing up rules for forest management, applying those rules, reducing uncontrolled cutting, and being flexible. In the Kelka there is a clear desire on the part of villages to manage forestry resources and a genuine ability to do so. However, village level authority remains fragile insofar as it is not officially recognized by the state and can therefore be contested (especially by outsiders). Local forest management in the Kelka is only possible due to either a tacit tolerance or an indifference on the part of the state. Village management of forest resources is also technically limited: woodcutting is not oriented (in space or time) and the quantities are not predetermined (on the basis of sustainable offtake). It is a largely passive system of management. In addition, in some villages it is clear that certain groups are excluded from the decision-making process: this is the case almost

everywhere for women, but also frequently for herders. The exclusion of Foulankriabé herders from all consultations at Amba is symptomatic of this failing. There are also clear limits to the capacity of villages to mobilize financial resources. Finally, financial management at the village level is often not transparent and - particularly with regard to woodcutting taxes - frequently inequitable.

At the supra-village level Waldé Kelka has demonstrated its capacity to resolve local conflicts, seen as a legitimate local level function by both members and non-members alike. The association has proved itself capable of promoting consensus, of negotiating with the state, and of adapting and evolving. Despite these genuine achievements, however, Waldé Kelka suffers from one major weakness: its mandate is limited to resolving, rather than preventing, conflicts. The association does not have the right to resolve latent or predictable conflicts. In common with all "federal" systems of governance, Waldé Kelka is also limited by the principle of non-interference in village level management; by its lack of financial resources; and - most of all - by the existence of parallel means of recourse.

2.3. The improvement and management of Nagnassoni's waterhole: financial aspects of DNRM

2.3.1. Background

Nagnassoni, a Senoufo village of Kléla arrondissement, situated some 25 kms. to the north of Sikasso, has a population of about 350, divided into four main lineages (of which the Dissa lineage holds the village chiefship). Rainfall conditions at Nagnassoni are relatively favorable (roughly 1,000 mm/year) and allow farmers to grow a variety of crops: cotton, maize, yams, millet, sorghum.

Nagnassoni's predominantly agricultural economy has undergone rapid change since 1980, when the CMDT introduced cotton (and, somewhat later, maize) into the area. Cotton is Mali's most important cash crop. Cotton production in Nagnassoni has progressively increased over the years and with it cash revenues have also grown rapidly. While cattle were previously held in only small numbers, cash accrued through cotton sales have allowed farmers to acquire increasingly large numbers of them. Today, cattle are important in several ways: as sources of organic manure (essential to sustained cotton and maize yields), as means of production (for plowing), and as a form of savings.

CMDT extension has also enabled the village to organize its own AV and to benefit from other inputs: functional literacy training, technical training, agricultural credit. Through the CMDT system of commissions for cotton marketing (which is managed by the

AVs at village level), Nagnassoni's AV has been able to fund the construction of collective infrastructures and to build up a cash reserve currently worth about 500,000 F CFA.

With increasing numbers of livestock, there has been a greater need to establish adequate watering points in the area. Along with a neighboring village, Zoumanadiassa, and several Fulani camps & hamlets installed on both villages' lands, Nagnassoni - with technical and financial assistance from PGT-Sikasso - has benefited from the improvement of Canri waterhole, situated to the north of the village.

PGT (Projet Gestion de Terroirs) is made up of 2 main components:

- a technical component, attached to the CMDT extension system, responsible for carrying out participatory analyses of village land problems, for identifying - in conjunction with village communities - solutions to problems, and for monitoring the execution of any subsequent village projects;
- a financial component, the FIL, which operates through local inter-village committees (CAIs) according to ground rules laid down by a farmers' commission. The FIL provides funding for interventions identified by villages in collaboration with the PGT's technical component.

2.3.2. Improvement and management of the waterhole

Canri waterhole has been improved by the construction of a check dam in the main water course, equipped with 2 concrete spillways, and by the deepening of the lakebed so as to increase the quantity of water that can be stocked. The work was carried out by a local contractor (PGT consistently tries to support the private sector) in 1994, with the villagers providing manual labor and lodging for the technicians. The total cost of improving the waterhole was in the order of 12.5 M F CFA (of which 0.5 M were paid by the villagers as an advance, the rest being covered by FIL). However, the beneficiary communities have made some important financial commitments:

- paying, in five regular annual installments, approximately 2.4 M F CFA (as well as annual "subscription" fees) to the inter-village fund managed by the CAI (of Fama) of which they are a member; the inter-village fund is intended to gradually replace the FIL as a funding source and thus constitute a local and autonomous financial capacity;
- keeping a maintenance account of 30,000 F CFA to cover small repair costs for the check dam and spillways;
- paying, in 20 annual installments, a total of roughly 12.5

M F CFA into a village "write-off" account, intended to eventually re-finance a similar project.

In order to not only protect the waterhole but also to ensure that their financial commitments are met, Nagnassoni and its partners have adopted a series of rules concerning use of the waterhole. Such rules ban certain activities (clothes washing, washing, keeping livestock on the dam, pasturing in the immediate environs of the waterhole) which might compromise the pastoral function of the waterhole and which might lead to sedimentation or damage to the dam. The rules also specify that local users must pay a monthly tax of 25 F/head of cattle in order to water livestock; and that outsiders must pay a daily tax of 50 F/head.

In practice, application of these rules has proved problematic. On the one hand, monitoring of the waterhole, the only way to make sure that rules are respected, appears to be inadequate. As a result, outsiders use the waterhole but do not pay the livestock tax; in the absence of monitoring, herders do not respect the rules concerning access to the waterhole. A lack of monitoring would also tend to indicate that local livestock owners who have not paid their taxes can continue to water their animals at Canri, raising the problem of free-riders. On the other hand, fiscal management also seems to be poor: tax provisions are contradictory (the real tax paid being 38 F/head rather than the specified 25 F/head); tax collection is also poorly organized and lacks transparency (resulting in corrupt practice among managers).

For these reasons the three groups have not been able to meet all of their commitments. The village write-off account is at less than 50% of what it should be. This shortfall is due to (1) the theft of collected taxes by one of the management delegates from Zoumanadiassa and (2) non-payment of taxes by several villagers. It is more than likely that tax collection will become increasingly difficult in the future unless something is done to correctly monitor use of the waterhole, to re-organize fiscal management, and to "punish" those who refuse to pay their taxes.

However, the problems have been rather less than they might have been because the Fulani - by far the biggest fiscal contributors - do not pay their taxes on the basis of waterhole use, but because their financial contributions have effectively allowed them to obtain tenure rights (which as "strangers" they would not normally enjoy). In the context of southern Mali, where pressure on land has increased dramatically in recent years, the Fulani of Nagnassoni and Zoumanadiassa have a clear interest in establishing more permanent rights to resources. That this is the principal motivation for the Fulani is certain: they maintain that Canri stocks insufficient and low quality (muddy) water, but despite this are willing to pay their livestock taxes.

2.3.3. Appraisal

The deepening of the waterhole and construction of a check dam have been advantageous to the villagers, allowing them to keep more cattle nearby and allowing the Fulani to establish clearer tenure rights. Designing and managing a new fiscal system has also been a beneficial experience for Nagnassoni and its partners.

Nagnassoni also illustrates a local capacity to invest in the long term and to do so in a financially significant way. The villages have also shown a capacity to prioritize needs: livestock and their watering needs are clearly crucial to the local economy and the improvement of Canri waterhole corresponds to a pastoral "problematic". Finally, the case of Nagnassoni also shows that local management is perfectly capable of drawing up new rules (both fiscal and otherwise) for the governance of natural resources.

Nevertheless, Nagnassoni illustrates limits to local level management of natural resources. In the first place, the degree to which Nagnassoni, Zoumanadiassa, and the Fulani are now financially committed raises doubts as to their capacity to fund further projects. If this is the case in southern Mali, in the heart of the cotton belt, it is likely to be even more so elsewhere.

The rules governing use of Canri waterhole are informal, lacking official recognition by the state. This raises the issue of the extent to which local managers will be able to insist upon conformity to rules and fiscal arrangements, particularly vis-à-vis outsiders. However, it is above all with regard to the application of rules and taxes that the example of Nagnassoni illustrates constraints to DNRM: monitoring and surveillance of the waterhole being inadequate, rules are simply unapplied. In addition, the day to day workings of Nagnassoni's new fiscal system are far from transparent, indicating a strong need for support, clarification, and reinforcement.

2.4. Kita: firewood supply, increasing the value of forest resources, and local management of forests

2.4.1. Background

The town of Kita, an urban "commune" with a population of roughly 22,000, lies some 180 kms. to the west of Bamako. Kita's hinterland includes some sixty villages (making up Kita's central arrondissement), mainly Malinké. The linkages between Kita and its rural hinterland are many and varied: economic, political, socio-historical.

Given a relatively high rainfall regime and a low population density (approximately 7 persons/km² for the Cercle of Kita as a whole), the area is endowed with significant forest resources. The

area also includes several gazetted forests ("forêts classées"), belonging to the state, created during the Second World War in order to ensure a wood supply for the Dakar-Bamako railway (which passes through Kita).

Villages in Kita's hinterland practise a number of agropastoral activities. Rainfed farming (dominated by the production of cereals) remains extensive, based on the shifting use of fallow land. Recently, however, local farmers have begun to grow cotton, currently extended by the CMDT's new regional directorate in Kita. Cotton production is certain to grow rapidly in the next few years. Livestock are kept by most villages, herded on rangelands and fallow.

Forest products are used for a variety of purposes. Malinké women harvest a wide range of fruits, often sold on Kita's market. The most important fruits are karité (for the production of shea nut butter) and néré (locust beans). In addition to wood cutting for domestic purposes (construction, etc.) there is also significant commercial cutting of firewood for Kita town.

Within this context, the "Projet d'Aménagement des Ressources Forestières du Cercle de Kita", better known as the BIT (ILO) project, has - since 1992 - set out to increase the value of forest products (particularly firewood) for local villagers. The BIT project operates on the assumption that increasing the value of forest products and resources will provide a greater incentive for villagers to manage, in a sustainable way, their forests. In order to achieve this the project has provided villagers with material support and undertaken a far-reaching restructuring of the firewood supply system.

2.4.2. The supply of firewood and the value of forest resources

Kita town, which needs about 22,000 steres of firewood every year to meet its energy needs, has been traditionally supplied in firewood by urban transporters using donkey carts. Townspeople, whether with or without cutting permits (issued by the forestry service), would cut wood either on the lands of surrounding villages or in the nearby gazetted forests. Until recently, few villagers took part in the commercial cutting of firewood for Kita.

In order to increase the involvement of villagers in the supply of firewood to Kita town, the BIT project has intervened in several ways:

- to begin with, by providing villagers with forestry jobs, ("clinical" and selective cutting, marking, trail making, ..) carried out within the framework of contracts between the forestry service and AVs; such work has allowed villagers to acquire woodcutting skills and, through remuneration, donkey carts (essential for commercial woodcutting);

- by establishing CAAF contracts between the SRRFH and local AVs. In gazetted forests the CAAF contracts specify wood harvesting quotas, cutting methods, and harvest sites, determined by forest management plans (established in 1990). For forests on village lands, parcels are delimited and parcelled prior to the drawing up of CAAF contracts;

- by setting up a system of rural firewood markets ("marchés ruraux"), managed by AVs with CAAF contracts. Such markets ensure that commercial cutting destined for the Kita market is controlled (covered by permits and transport coupons, stacked in steres, derived from CAAF quotas);

- by trying, in 1993, to eliminate all uncontrolled woodcutting (previously allowed through regular cutting permits) and to restrict the supply of firewood to rural markets. This decision, quickly and effectively opposed by townspeople, was eventually revoked in late 1993;

- following the failure of the ban on uncontrolled cutting, the project and forestry service then limited uncontrolled cutting (authorized by regular permits) to dead wood and to areas where there were no rural markets operating;

- by implementing a much stricter system of control around the town. Four control posts (manned by foresters) have been established on the main roads leading into Kita. These control posts ensure that carts coming from rural market areas have transport coupons and that carts from the "uncontrolled" zones have regular cutting permits. This new system of control has considerably reduced, but by no means eliminated, the possibilities of illegal cutting;

- by applying, since January 1996, new tax rates on woodcutting. Under the new system cutting in controlled areas (where there are rural markets) is taxed at 200 F/stere; in uncontrolled zones the tax is set at 500 F/stere.

Taken together, these various measures have, since 1992, significantly changed the way in which firewood is supplied to Kita. In 1992, for example, villagers supplied only 24% of the "official" amount of wood brought into Kita; in 1995, villagers supplied nearly 60% of this figure. Townspeople have experienced a substantial cut in their share of the firewood market. However, villagers are far from totally dominating the system as townspeople can still cut wood in "uncontrolled" areas with regular cutting permits, as well as on lands belonging to villages with rural markets (although not in delimited forests). In addition townspeople are still able to compete with villagers (despite having to pay higher taxes) because they - unlike rural suppliers - do not yet have to respect rules about steres.

2.4.3. Local management of forestry resources

Traditional management of forestry resources in Kita is not restrictive. For the most part access to forest products (fruits, leaves, wood, ..) has always been relatively open, to both local and outside users. Such an apparently open access regime clearly owes its origins to the comparative abundance of forestry resources and to the low population density of the area.

The new CAAF system introduced by the BIT project, however, is intended to change this tradition. On gazetted lands, the AVs selectively cut their firewood quotas using regenerative practices (cutting dead and sick trees, thinning out dense growth, coppicing) on predetermined tracts of forest. Harvested parcels are then supposed to be protected from fires, livestock, and subsequent cutting.

In non-gazetted areas, on village lands, the CAAF system is based on a preliminary delimitation of forest lands and their sub-division into parcels. In theory, each village forest is divided into ten parcels, to be selectively cut on the basis of a ten year rotation.

The extent to which these new forms of forest management are "participative", however, appears limited. In gazetted forests, the AVs operate more as "contractors", cutting firewood according to rules and principles established by the forestry service. They do not participate in the overall definition of forest management plans. The situation is far from being one of a system of co-management. The same remarks apply to village forests, where the delimitation and sub-division of forests appear to be largely a forestry service affair, the villagers having only a vague idea of the principles involved and having little input into drawing up any management plans.

In addition, the extent to which forest management on village lands is comprehensive seems limited. While villages may protect designated forests on their lands, they do not apply an overall management plan to the rest of their lands (many of which include woods) - which therefore remain subject to "uncontrolled" cutting by both themselves and townspeople from Kita. There is not, then, a broad vision of land use and forest management.

2.4.4. Appraisal

The BIT project's approach has been highly innovative and interesting. The project has shown that it is possible to reform the firewood supply system and market so as to make it profitable to rural communities, rather than to townspeople. In Kita today, the principal suppliers (and beneficiaries) of the firewood market are villagers, for whom firewood has now become an economic resource of considerable value. There has, then, been an important

and significant change in the structure of incentives in Kita.

However, this transformation of the structure of incentives does not appear to have had a significant impact on the management of forestry resources. This "disjunction" can be explained in several ways. To begin with, rural control over the firewood supply is not complete: only 35 of the 65 villages surrounding Kita have rural markets, leaving townspeople with plenty of scope to cut firewood in other areas (as well as in non-delimited areas of those villages with markets). In addition, the value of firewood to villagers should not be over-stated: in a village such as Bendougouba, with population of 2,000 and a firewood quota of 600 steres, gross revenue per capita from firewood sales amounts to only 600 F CFA/year. Moreover, the relative value of firewood is also limited: compared to cotton, for example, firewood harvesting is of only limited profitability. Although firewood in Kita is undoubtedly an economic resource, its value needs to be put in perspective.

Another factor which appears to have limited the extent to which a rural firewood market has resulted in local level forest management is the lack of a complementary "land tenure" approach on the part of the project. Villages in Kita have lands, their ownership of which is recognized by customary law but not by the state. Even if they wanted to, villages cannot therefore control land and forest use on their lands. The project, in turn, in adopting an approach based on contractualization (the CAAF system) - which amounts to the forestry service "sub-contracting" with AVs for forestry activities - does not encourage an appropriation of land by villages. It is as if the forestry service "owns" the forests and contracts villages to cut them. In the "domaine protégé" (effectively village lands in modern Malian land law) contractualization should be reconsidered and modified. For gazetted forests - where the state is clearly land owner - the project's approach is also timid and does not allow villages to more actively participate in forest management.

Kita also illustrates the problem of conflicts between different user groups. The reform of the fuelwood market has certainly benefitted rural groups; for townspeople, however, the reforms have been detrimental and they have reacted energetically in opposing changes.

Finally, the experience of the BIT project in Kita illustrates insufficiencies in the legal framework. Forestry reforms in Kita have been "ahead" of legal reforms, the distinction between "controlled" and "uncontrolled" cutting only having been introduced into forestry law in 1995. As a result, some of the reforms proposed in Kita have been legitimately contested - and thus slowed down - by townspeople.

3. Synthesis

3.1. Tendencies in contemporary Mali

Decentralization in Mali can be seen from two points of view: from "above" and from "below".

Looked at from "above" - from the standpoint of central government and policy makers - decentralization is a "reality". It is part of everyday official discourse, a key element of the current government's policy, and a clear option of the state. There is, without a doubt, a real political commitment to decentralization.

This willingness to decentralize in general is brought out in several ways. Importantly, administrative decentralization is an integral part of the Third Republic's constitution, which clearly promulgates the establishment of local government institutions. This constitutional commitment to decentralization has, since 1992, been backed up by new legislation which has created a juridical framework within which elected local governments - at regional, district, and communal levels - can be established. New legislation has also specified how such local level institutions of governance are to function. A Decentralization Mission, established in 1992 and attached to the Prime Minister's office, is in charge of overseeing the ongoing process of defining and orientating decentralization policy and preparing appropriate laws. Outside of Bamako, in the regions, local level groups have provided support and feedback for the Decentralization Mission, allowing the population to participate in the policy process. More recently, the future rural communes have been geographically defined, laying the basis for communal elections (which are scheduled for the second half of 1996). Despite inevitable delays and the intrinsically slow nature of legislative reform, there can be no doubting the political will of the Malian state to decentralize administrative (and public service) functions. It should also be noted that Mali is probably well ahead of most other Sahelian countries in this respect.

For DNRM, the same comments apply. A number of new laws have been adopted which allow for a more favorable legal environment for DNRM. New legislation, for example, has defined the conditions under which natural resources can be managed at different levels (state, commune, individual). Forestry laws have also been progressively altered so as to encourage decentralized management: most recently, a new law permits the state to "contract" forest management to "local structures" and the creation of rural firewood markets, managed by local populations. This particular reform also allows for a modification of existing fiscality, local management structures enjoying the right to "commissions" on any forestry taxes they levy. In terms of general policy there is also a clear

commitment to DNRM: national agricultural policy, for example, puts an unequivocal emphasis on village-based land management as a prerequisite for sustainable development. State institutions are also being restructured so as to better cope with a decentralized environment: the Ministry of Rural Development, for example, is being reformed in order to provide adequate support for rural communes and local level management structures. Finally, innumerable workshops, seminars, and colloquiums on decentralization point to a national commitment to the process of DNRM.

In short, and viewed from "above", there is a real sense in which decentralization has been accepted as national policy. For those who knew Mali prior to 1991, this has undoubtedly been a major - and positive - development.

However, viewed from "below", the commitment to decentralization appears to be much more ambiguous. The state apparatus in the "field", for example, is much less committed to or convinced of the need for decentralization. New rural communes, accepted as being inevitable, remain nonetheless the object of much skepticism and cynicism in the eyes of state employees. For many administrators and public service personnel decentralization is not a welcome development. State personnel often doubt - and sometimes reasonably so - the capacity of local populations to undertake efficient, active, and beneficial self-governance. For DNRM the same comments apply. Decentralization will clearly result in a decline in the prerogatives and powers (both formal and informal) of public servants. Forestry agents, for example, having already experienced a drastic decline in their authority, have no desire to lose what little remains of their power (and its advantages). It is entirely natural that many public servants - opposed in practice to decentralization - try to slow down the process whereby national policy is transformed into political praxis.

Local populations also appear to be equivocal about decentralization. For some groups, initially enthusiastic about the possibilities offered by new rural communes, the process has become overly politicized and thus fundamentally compromised. For others, decentralization looks as though it will result in domination by local elites. Others comment that decentralization may be a convenient way for the state to divest itself of responsibilities.

On the other hand are those who view decentralization in a positive light, seeing it as an opportunity to assume local management of public services and natural resources. For these groups what is sometimes confusing is the extent to which the state will genuinely devolve authority to local government, an issue which is by no means clear given the reticence of state employees viz-à-viz decentralization.

In the specific case of DNRM, the same ambiguities apply. Partisans of local level management (such as villagers in the

Kelka, rural woodcutters in Kita) often find themselves frustrated by the limits to their capacity to manage resources. Those who perceive dangers in decentralization as a whole are particularly conscious of the potential problems associated with exclusion from access to natural resources and thus with threats to their economic freedom. The urban woodcutters of Kita, the Foulankriabé herders of the Kelka, and the Fulani of Nagnassoni (who have resolved the problem by effectively "purchasing" rights of access) are examples of this.

In short, the enthusiasm for decentralization which can be readily identified in Bamako is not unequivocally mirrored on the ground.

3.2. Constraints to DNRM

The four case studies show that local populations do have the capacity and many of the skills necessary for DNRM. However, the same studies also show that there are limits to and weaknesses associated with local level management of natural resources. Such constraints and weaknesses can be sub-divided into four categories - economic or financial, institutional, technical, and social.

3.2.1. Economic & financial constraints

DNRM often seems to be constrained by a lack of financial resources at the local level. In the Kelka, for example, the local economy does not allow villages to generate significant surpluses; in Ibissa as well, it can be seen that villagers do not have the financial resources to invest in improvements to their irrigation system. Even in Nagnassoni, in the heart of the Malian cotton belt, there are clearly limits to the local capacity to mobilize financial resources.

A similar constraint is exercised by the fact that many natural resources are of only limited economic value, something which is particularly well brought out in the case of Kita. Wherever rural populations have invested in DNRM, however timidly, it can be seen that the resources in question have a high relative value. Thus, in Ibissa effective management of the spring's water is clearly predicated on the economic value of off-season market gardening; in the Kelka, high urban demand for fuelwood is one of the principal motivations underlying local level forest management; and in Nagnassoni, the economic importance of livestock explains a local preoccupation with pastoral water supplies. In Kita, however, the fuelwood market is rather less important (both absolutely as well as relatively, when compared to cotton farming), which may explain the limited extent to which active DNRM has taken place there. The more that natural resources are valorized, the more likely they are to be effectively and actively managed at the local level.

Finally, the capacity of local communities to manage financial resources (associated with DNRM) in a clear and transparent manner appears limited. Village management of fiscal resources in the Kelka and in Nagnassoni, for example, is far from rigorous. Simply providing local managers with access to funds is not enough; they must also, if DNRM is to be enduring, be provided with the skills to correctly manage them.

3.2.2. Institutional constraints

An unfavorable fiscal regime represents a serious constraint to DNRM. In Kita, for example, village associations still have no access to "commissions" (or rebates) for their management of rural firewood markets - because existing legislation has not yet defined the terms under which such transfers can be made by the state. As a result they remain unable to directly invest in forest management. In the Kelka, as well, local taxes and fines are not only, strictly speaking, illegal, but also minimal compared to what the state levies (in the way of cutting permits and fines) on forest use. Nagnassoni's experiment in local fiscality is also illegal.

Existing land tenure arrangements remain unfavorable to an equitable and participative local management of natural resources. The problem with land tenure can be looked at in two ways:

- in national tenure law (the "code domanial et foncier") customary rights are recognized - at both individual and collective levels - but the nature and extent of these rights are not clearly defined. Such a vague definition of customary rights results in considerable ambiguity, with different actors (the state, local communities) having different - and sometimes conflicting - perceptions of what is and what is not a customary right;

- customary land rights are deeply embedded in the values of rural society. Despite this there are often differences in the perception of how far these rights extend, both in spatial and other terms. In the Kelka, for example, there is considerable potential for conflicts over land rights simply because the boundaries between different villages are vaguely or badly defined. In addition, there can be and are different perceptions of what rights include: at Amba (in the Kelka), for example, the customary rights of Foulankriabé herders, as far as the villagers are concerned, are limited to usufruct and information; for the Foulankriabé, on the other hand, their rights include not only usufruct but also the right to be consulted and to participate in the process of rule-making about resource use.

Finally, customary land rights do not enjoy legal security. National land law recognizes customary rights as long as the state has no need of the land over which they apply. Customary rights are

therefore precarious and conditional. While this insecurity of tenure does not appear to stop local communities investing in their land (as shown by Nagnassoni), the management of such investments remains nonetheless "legally" problematic.

3.2.3. Technical constraints

Although rural populations demonstrate many technical skills in their management of natural resources, they often lack a capacity to develop new practices or techniques. At Ibissa, for example, the villagers do not know whether or how their spring could be protected more effectively in order to sustain its supply of water. In the Kelka, villages continue to manage resources in "traditional" ways, with little attempt to introduce more active, more prescriptive forms of forest management. And, in Kita, villages appear to have few notions of overall land and forest management.

The case studies also show that there is often a problem associated with the application of NRM rules. In the case of Nagnassoni, a lack of monitoring and poor application of rules do not bode well for the future. It has also been seen that local communities sometimes inequitable in their management: in the Kelka, for example, per capita cutting taxes make no distinction between large scale woodcutters and smaller ones. For DNRM to work better, these issues will need to be addressed.

3.2.4. Social constraints

The problem of "exclusion" is a real one. In Kita DNRM seems to inevitably imply the "exclusion" of townspeople; in the Kelka, village level management is not always as "comprehensive" as it might be, herders in particular being excluded from consultation and the process of decision making. The conflict between Tibouki and Tété has its origins in the exclusion problem, Tété concerned with its poor access to forests on other villages' lands. At Nagnassoni the Fulani, in order not to be excluded, have clearly decided to pay a disproportionately large part of the cost of upgrading the waterhole. Exclusion is a serious issue and - if DNRM is to be sustainable - must be addressed.

Similar to this problem of exclusion is another to do with participation. The case studies show that there are sometimes social categories (especially women) who are unable to participate in decision-making. In addition, there can be difficulties for local management structures to sufficiently take into account all points of view. DNRM, although certainly more "democratic" as a system of governance than central government management has been, can be improved so as to allow for greater participation by all sections of the population.

4. Improving DNRM: some recommendations

4.1. For the state

In order to partially resolve some of the problems associated with financial resources and fiscal policy, it is recommended that the state:

- provide a fiscal environment more favorable to DNRM, by increasing commissions/rebates to local management structures and by giving local institutions more latitude to tax resource use. Without such a fiscal environment, local groups will not have the financial resources to effectively and sustainably manage natural resources;
- provide a fiscal framework favorable to the valorization of natural resources by, for example, reducing taxes for private sector production & commercial activities related to relevant products (e.g. honey, shea butter, carpentry, ..);
- provide a fiscal framework favorable (through, for example, tax exemptions) to the emergence of a private "technical support" sector, capable of advising local communities on DNRM, thus ensuring the availability of more management skills in rural areas.

With regard to issues of land tenure it is becoming increasingly urgent that the state clarifies the nature of customary rights, as well as simplifying existing land law procedures. National land law has been reviewed - by numerous workshops and seminars - since 1992, and it is now a question of rapidly and decisively moving onto proposing new legislation. The proposed reforms to land law do have the important advantage of taking into account customary rights. It is now time, in order to provide local communities with the incentives to manage natural resources, to take appropriate legislative action.

In terms of defining the respective tenurial domains of the state and local government, recently proposed laws should be drawn up and submitted for legislation. This would clearly facilitate the process of juridical clarification.

The state should also find a way of officially recognizing local level mechanisms for conflict resolution related to natural resource management, in recognition of their low cost and greater

the approach adopted by PGT/Sikasso, which deliberately fosters private sector involvement in village projects (feasibility studies, oversight, execution), is an interesting example of building up local skills in DNRM.

acceptability in the eyes of most resource users. In order to do this the state simply needs to acknowledge the right of initial and compulsory recourse to local conflict resolution authorities (such as Waldé Kelka), preliminary to any appeal to judicial or administrative bodies.

Finally, the state needs to maintain the impetus of current reforms for the Ministry of Rural Development and the Environment, allowing it to become increasingly better adapted to providing support for DNRM. Local populations need appropriate and flexible technical assistance.

4.2. For operational projects (state, NGO, donors)

It is strongly recommended that operational projects develop local systems to finance DNRM activities. Although somewhat exceptional given a context of cotton production, the FIL in Sikasso provides an innovative approach to this problem. The operating principles of FIL are almost certainly replicable elsewhere in Mali.

Projects should also explore ways of increasing the economic value of natural resources and their products by establishing savings and credit schemes, accessible to local producers and from which they can obtain seed capital in order to undertake transformational and commercial activities. Unless natural resources are sufficiently valorized local populations are unlikely to actively invest in their sustainable management.

There is also a need to provide local level resource managers with appropriate training so that they can provide transparent, equitable, and competent management of financial resources. Such training need not be complex and can be limited, in the first place, to an introduction to basic principles and techniques⁴.

Technical training for local populations needs to be sustained and intensified, with an emphasis on improved, simple and low cost techniques. Forest management, for example, should not involve costly investments (tree planting, rock bunds, etc.).

Operational projects should also deliberately seek to provide rural populations with information regarding changes in the institutional framework. If the state does redefine land tenure rules and clarify the status of customary rights, projects must make sure that the intended beneficiaries of such reforms are aware of any changes in order that they can effectively profit from them.

⁴ the Rural Management Project ("Projet de Gestion Rurale") in southern Mali, intended to provide AVs with sound management techniques, is a potentially useful example of the kind of support necessary.

In order to encourage better local level management of natural resources it is recommended that projects adopt a select and progressive approach to their assistance. If local communities do not apply rules of resource use or draw up inequitable or exclusionary rules, projects should not provide them with further material support. Such communities need to be criticized and, if possible, assisted in order that their management become more appropriate and equitable. If DNRM is to prove viable and beneficial, it needs to be better than centralized management.

A final recommendation for operational projects: they should create as many mechanisms as possible for communication between themselves and local communities and between local groups. Such mechanisms will reduce the degree to which certain groups may eventually feel excluded from resource access.

4.3. For local populations

Rural populations should continue to constitute representational bodies at the supra-village or even regional level. Such federations or unions allow rural people to negotiate more solidly with the state, as well as with operational projects. They are also capable of performing other functions beyond the scope of isolated village organizations.

Local populations also need to establish their own mechanisms for conflict resolution, most importantly at the supra-village level. This kind of "alternative" conflict management is frequently successful, as has been seen in the case of Waldé Kelka. It is also far more accessible and inexpensive (in terms of transaction costs) than the "official" juridical system.

In order to improve local governance of natural resources, rural populations need to insist upon equitable and transparent management on the part of their leaders. Leaders, in turn, must be accountable to their communities - and made to be so. Management of natural resources by and for local elites will only be a fraction better - for the majority of users - than centralized NRM. Rural groups must insist on accountable management.

To reduce the likelihood of unjust exclusion, local populations need to bear in mind the "reciprocal" implications of any rules they may draw up for NRM. In excluding some, one can be excluded by others; in limiting access to some, one's access can - in turn - be limited by others. The right to freely manage local natural resources carries with it certain obligations.

Finally, it is recommended that local populations themselves apply the principle of subsidiarity to their management of natural resources, rather than concentrating all functions and responsibilities at higher levels (e.g. village chiefs).