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**Institutions and woodstock governance in Mali**

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## INSTITUTIONS AND WOODSTOCK GOVERNANCE IN MALI

### A. The Problem: Reconstituting Self-Governing Institutions for Woodstock Management in Boré Forest, Fifth Region, Mali

Bore Forest in Mali's Fifth Region has the attributes of a common pool resource. Current high demand levels mean the forest must be managed if it is to survive as a productive resource. Yet an institutional crisis in 1991 - a violent regime change at the national level - has clouded Boré governance arrangements. Several possibilities exist. The forest might be:

- again governed and managed as a series of local common property resources, as it was until 1972;
- dealt with as an open access resource subject to uncontrolled use as it very largely was under forest service management, 1972-1987; or
- subjected to co-management by the forest service in collaboration with local popular authorities, continuing the approach adopted from 1987 to 1991.

This paper explores issues posed by this choice. Since the fall of the Traoré military regime in 1991, local efforts are underway to restore control over Bore Forest more fully to villagers who inhabit the forest or live in areas immediately adjacent. The Near Bast Foundation (NBF), a non-governmental organization (NGO), has strongly supported these efforts.

The case illustrates generic problems that arise in Mali and other areas of Francophone Africa, where returning to local communities the governance and management authority over renewable natural resources (RNR) claimed after independence by the national government is under consideration. The case is of significance for other parts of Africa and indeed Third World countries as it highlights dilemmas inherent in trying to improve the efficiency and equity of RNR management by transferring political power from the central to local-level governments.

### B. Analytic Framework

The paper uses a framework for the analysis of common pool resource problems to examine the opportunities and difficulties facing villagers and others interested in re-establishing a self-governing management system for Boré Forest. The paper treats recent and current patterns of behavior as responses of relevant actors to three sets of incentives. The first set is inherent in the attributes of the forest as a renewable resource producing

economic goods and services. The second set of incentives derive from characteristics of the communities inhabiting and/or using the forest, in conjunction with demand patterns. The third set of incentives arises from the nature of the rule systems governing access to forest resources and harvesting practices.

In light of these incentives, relevant actors choose strategies to obtain their preferences. They modify their strategies when significant changes occur in any set of incentives. Strategies implemented produce patterns of behavior. Behavior produces outcomes. Outcomes can be evaluated in terms of woodstock productivity and sustainability, and the efficiency and equity of Woodstock management and use.

### **C. Attributes of the Forest as a Set of Resources**

Boré is a large Woodstock,<sup>1</sup> covering 1,200 to 1,500 km<sup>2</sup> on the northern edge of the Bandiagara Plateau, in Mali's Fifth Region. The forest is located almost entirely within Douentza Cercle. It has traditionally provided several products:

- firewood for domestic consumption and, more recently, sale in the regional centers of Douentza and Mopti;
- forage for resident and transhumant livestock herds;
- wood for construction, mainly local, and crafts; and
- medicines and other minor products.

In addition Bore helps stabilize the region's environment and provides habitat for a dwindling wildlife population.

Boré is a complex resource. Its predominant characteristics are those of a common pool resource. It is relatively difficult to control access to the forest. Many potential users can enter the area. Forest products are subject to rivalrous consumption. Fuelwood or forage consumed by one user is removed from the common supply and no longer available to others. On the other hand come services, e.g., environmental stabilization, have the attributes of public goods: access is virtually impossible to control and consumption is joint and non-rivalrous. Bore is a complex common pool resource because it produces multiple and valuable goods and services. A variety of different users consume them, making the resource subject to conflicting demands.

The dominantly common pool nature of this complex resource - difficulty of controlling access and rivalrous consumption of

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<sup>1</sup> All ligneous vegetation, from trees to bushes.

forest products, coupled with strong demand for those products - creates incentives for individuals users to get while the setting is good, before rival users consume the available supply. This motivation underlies the Boré forest governance and management problem: unless access and harvesting levels are regulated, excessive demand will degrade the resource. The public services - environmental stabilization and Maintenance of wildlife habitat - Bore produces generate no incentives for individuals to try to preserve the forest. It is difficult to limit access to both services, and consumption is non-rivalrous.

#### D. Nature of User Communities and Market Demand

User communities are diverse both ethnically and in terms of production systems. Ethnic groups fall into two classes based on production systems: sedentary farmers; and sedentarized and transhumant stockherders. The former class includes Soninke, Bambara, Dogon and some Rimaiibe.<sup>2</sup> The latter comprises Fulbe, Fulankralbe and some Rimalbe. These divisions are not neat. Many sedentary farm families own some livestock. Professional woodcutters and wood craftsmen and blacksmiths, the latter two of Twareg and Fulbe origin, live in the sedentary communities. Farmers have obtained their fields by clearing forest land. Agriculture in this drought susceptible region is risky. Many farmers make ends meet in bad agricultural years by cutting fuelwood for sale in regional cities. If the wood harvested has died of drought, it makes sense to use it before termites do.

Stockherders may live exclusively from their herds, as do some Rimalbé and most transhumant Fulbe, but many, such as the Foulankraibe and some Fulbe, are agro-pastoraliste. Both pastoralists and agro-pastoralists see the forest as a source of dry season forage for their animals. Many lop branches from healthy trees so that their animals can strip the green leaves.

Agriculturalists' and pastoralists' interests in live trees may conflict, just as they may be complementary. For example, pastorallsts see the trees as a vital source of forage during the dry season. Farmers rely on trees for building materials and firewood as well as for forage if they keep animals. They also occasionally want to clear land for new fields. Land clearing eliminates both forage and wood production potential.

If pastoralists harvest forage carefully, essentially by pruning, they cause growing trees little damage. If they lop off many large branches from single trees, they can destroy them. Lopping branches is more labor efficient than pruning. Lopping

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<sup>2</sup> The Fulfulde term for captives, usually taken in war, and their descendants.

many branches from a single tree is more labor efficient than lopping a few branches from many trees. Fallen branches, once stripped of leaves, can be used for construction, fuel, fencing, etc. However, major scale lopping leads over the long-term to forest destruction. Pruning preserves the resource.

Harvesting dead wood for domestic consumption or commercial use poses no problem. But current cutting rates will exhaust the supply in a few years. If woodcutters then cut live trees to produce "dead" wood for sale as fuel, they will destroy the Woodstock as surely as if they clear forest land for cultivation.

These two production systems, given constantly rising demand for fuelwood in regional cities, create strong motivations to consume forest products and risk destroying the base resource.

Of these ethnic groups, the Dogon and Rimalbé have the strongest environmentalist traditions. The Foulankraibe by contrast assume that their pastoral production system is doomed locally because they cannot see how to preserve a stock of trees to provide dry season forage.

## B. Forest Governance, Interactions and Outcomes

This section describes three distinct sets of Woodstock governance and management rules: 1800s to 1972; 1972-1987; and 1987-1991. Each set of rules created quite different motivations for potential users. In combination with the attributes of the resources, the characteristics of the communities exploiting the forest, and changing demand patterns', each set of rules motivated distinctive patterns of behavior, and outcomes for the Woodstock evaluated in terms of efficiency, equity and sustainability.

### 1. Traditional Local Rules and Overlapping Regimes

During the pre-colonial era Bore Woodstock was governed and managed as several geographically distinct common properties, by sedentary villagers living in scattered settlements within its confines. Each village governed its Woodstock as it saw fit. The general pattern, exemplified by the rules in the Rimalbe community of Amba, provided for collective control of both access and harvesting. All residents had rights to the common property.

Non-residents were prohibited from entering Amba forest to cut live wood or collect dead wood. If they wanted specific products, for example, building poles, they submitted a request to village leaders, villagers were then detailed to collect the wood, and paid for their efforts by those who placed the order. Transhumant pastoralists were forbidden to lop live branches for forage in Amba forest. They could obtain authorization from the

village council to pasture their herds in areas of the forest assigned them on a case by case basis by the council. Those caught violating the cutting prohibition were typically fined an animal and told to leave village lands.

Residents were free to collect dead wood as they wished, and to harvest small amounts of browse for their own animals that were either sick or stabled in the compound. They were expressly forbidden to lop leafy branches or cut live trees. To regenerate the woodstock, the forest was declared closed to everyone during the rainy season. This simple rule facilitated enforcement.

All villagers served as monitors and enforcers of woodstock regulations. Instead of regular patrols, ad hoc groups were formed to deal with violators who resisted local penalties.

Overlapping these local jurisdictions were two second-tier governments. Bore Canton, a general purpose jurisdiction with conflict resolution authority, was the first of these. Boré forest lies entirely within the boundaries of the old Boré cantonal Jurisdiction. Woodstock disputes could be appealed to the canton chief for resolution. His decision was final.

The second overlapping jurisdiction was a special purpose district created as part of a larger system, the dina, to facilitate transhumant pastoral production systems in the region. Leaders of the Fulbe Macina Kingdom designated cattle tracks through the forest, and grazing areas near the ponds that served as watering points for the transhumant herds on their seasonal movements to and from the Inner Delta of the Niger. This complex system of forest governance and management functioned quite effectively according to informants. It continued through the colonial era and after independence until 1972.

These rules, by rigorously limiting access, regulating use, promoting woodstock regeneration and providing an effective system of monitoring, enforcement, reasonable penalties and low-cost but reliable dispute resolution procedures, created incentives for "woodstock-friendly" behavior in an era when demand for forest products was less intense than presently. The woodstock was managed on a sustainable basis at minimal cost (efficiently). Equity of access was preserved for resident users. Non-residents could obtain forest products, but only via authorization from village councils. Pastoralists who abided by use rules, could use the forest area as a pasture and browse source without charge. Those who wanted wood products- chiefly construction wood - had to pay to have it harvested by residents.

During the next time period, the incentives for responsible use and stewardship of local, component woodstocks of Boré forest were deliberately destroyed, Foresters spearheaded this process by manipulating the forestry code. They effectively converted

the commonly managed woodstocke into a single, open access resource, enriching themselves in the process.

## 2. Forest Service Dominance: Boré as a Single Jurisdiction

From 1972 to 1991 agents of the Malien Forestry Service asserted operational authority over the entire Bore Forest. In principle, they sought to supplant village, cantonal and Macina Kingdom common property rules with forestry code regulations as the dominant system of forest management. For the first 15 years of this period, foresters systematically undermined local Woodstock governance and management systems, and often abused their authority to extract bribes from users of forest resources.

Formally, this approach redefined Boré forest as a single jurisdiction, managed by foresters, with no co-production of forest governance and management by forest users. Limits on access were eliminated. Non-resident commercial wood buyers from Mopti began purchasing wood using forest service authorization. Harvesting regulations, and related disputes, became the sole province of the foresters. In effect controls were often applied in a very lax manner. Inadequate Forest Service manpower and materiel explained some of the laxity; ex ante and ex post bribes accounted for the rest. Collective fines were regularly imposed, and few if any receipts were issued for fines collected. This converted the village woodstocks, formerly managed as common properties. Into a single, forest-wide open access resources.

These rules created strong incentives for users to consume, to avoid forest service controls if possible, and to avoid investing in protection of the resource. Herders, sometimes transhumant but more often local, damaged or destroyed many trees to get leafy forage for their animals during the dry season. Herders may have suffered the most fines under these regulations, but sedentary groups complain bitterly about their loss of authority over their woodstocks and consequent inability to limit pastoralists' depredations. Sustainability, efficiency, and equity of Woodstock management suffered. Foresters and wood merchants benefited consistently from this system. Some forest residents also benefited from this system. Its introduction coincided with the 1972-74 drought, which killed many trees. Subsequent droughts in the mid-1980s destroyed many others. Much dead wood was cut and sold in the regional centers of Douentza and Mopti, and helped some residents survive the drought years.

## 3. Co-Governance and Co-Management.: 1987-91

From 1987-91, the Douentza District forester and his subordinate at Boré forest tried to reverse this practice. They sought to apply forestry code regulations strictly but fairly.



and organized woodcutters in local villages to play a strong part in co-governing and co-managing the forest. They accepted the idea that foresters alone could never regulate access and use. They enlisted the assistance of forest area residents with generally positive results. Villagers were vested with authority to issue cutting permits and control access to the forest.

This system, though not without serious short-comings, at least pioneered a locally new approach to Woodstock governance. One weakness lay in intra-forestry service conflicts. Forestry districts other than Douentza began to issue permits to cut wood in Bore, undermining local efforts to control cutting. The second weakness involved organizational problems within the woodcutters' cooperative, charged with administering the permit system. A third weakness flowed from the lack of clear delimitation of village boundaries within the forest. Competition arose for wood in disputed areas. Because of the difficulty of establishing claims to wood, and the uncertainty of penalties, some began to harvest live trees. Nonetheless, the co-production rules laid the groundwork for a renewal of local involvement in forest governance. The system was in place too short a time to permit thorough evaluation, but it improved relations between foresters and of the Bore area residents, and somewhat increased efficiency and efficacy of management efforts.

## **F. Current Situation and Options**

### **1. The Recurrent Problem: Open Access or Common Property**

The end of the Traore regime in March 1991 ushered in a transition period that began tumultuously. Popular outrage at abuses of authority committed under the old regime flared up in

Leaders of the military coup group that finally took power from Traoré after popular riots and the loss of 600 lives move quickly to outlaw this practice. However, the fact that several foresters, along with some customs agents, were either roasted or narrowly escaped this fate was not lost on other members of these agencies. Malien foresters, many of whom behaved for do years as lords of the bush, decided they were safer in their offices. This voluntary withdrawal created a power vacuum in rural areas concerning RNR governance and management, confirming the open access status of remaining woodstocks. Pastoralists and

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<sup>3</sup> The term derived from the cost of the inputs for these executions: 300 FCFA for a liter of gasoline, and 20 FCFA for the matches to torch the suspect once well doused with fuel.

woodcutters have taken advantage of the situation, engaging in largely unregulated use of forest resources in Douentza Cercle.

At this point a consensus seems to be building among residents of the Bore area that someone must reassert authority over the Woodstock lest it be permanently degraded or entirely destroyed. Residents interviewed indicated a preference that they be the ones vested with authority. Near East Foundation personnel have pursued discussions in most villages in the forest. Most are interested in reclaiming authority over the forest, but critical problems must be overcome.

## 2. Conditions for Effective Common Property Governance

First a decision will have to be made about who will have governance and management authority over Boré woodstocks. Local residents interviewed were hesitant to assert authority because 20 years of forest service dominance have so diminished village claims to woodstocks that they were unsure they could protect their resources. But they favored strengthening the new co-production system, pioneered by Douentza foresters during the period 1987-91, by vesting even more control in villagers.

This suggests villagers would prefer to subdivide Boré forest into territories collectively controlled by individual villages. Delimiting village boundaries and attributing disputed areas to specific communities then becomes a major issue. Resolving it will require negotiations among community representatives to arrive at a division acceptable to all. Otherwise conflicts will persist and weaken credibility of the system. Once boundaries are fixed, officials of village jurisdictions must be accorded authority to limit access to their forests, and to set harvesting methods and rates. They will have to decide how to monitor compliance with rules. If monitoring is to be more intense than it was before 1972, they will have to decide how to mobilize the human resources to ensure adequate monitoring. They will have to set penalties for violations. They will have to work out dispute resolution procedures, and set up an appeals procedure. They will also have to work out arrangements with either foresters or officials of other government agencies to provide back-up enforcement support on an as-needed basis. Finally, it would probably be useful if villages established a forest-wide jurisdiction to handle common problems and exchange information about approaches adopted by member villages to common problems.