



# From Exclusion to Participation: Turning Senegal's Forestry Policy Around?

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**Summary.** — A century of centralized forestry policies has excluded Senegal's forest villagers from charcoal production and marketing. Policies have given access to marketing and labor opportunities to urban-based merchants who hire Guinean migrant laborers. While forest villagers neither produce nor consume charcoal, commercial production is cutting forests on which villagers rely. In 1993, progressive forestry agents ushered in a new "participatory" forestry code. But, this new policy may not be equitable nor beneficial, and it risks adding control over village labor (for forest management) to the long list of Forest Service controls. Locally accountable representation, local decision-making powers and simple local-management enabling policies could diminish these risks.

## 1. DARU KIMBU

Daru Kimbu is a small peanut, millet and sorghum farming village of 570 Serer and Wolof inhabitants, located in the forests of the upper Gambia River Basin in the Tambacounda Region of Eastern Senegal. When I first visited Daru Kimbu in the dry season of 1986–87, there were over 100 migrant Fulbe, from neighboring Guinea, living in the village and cutting wood in the surrounding forests to produce charcoal for urban markets. This fairly common concentration of *surga*,<sup>1</sup> as the charcoal producers are called, represented a tremendous pressure on the village forests.

The villagers of Daru Kimbu were delighted when the charcoal producers first arrived in the dry season of 1984–85. They saw them as a source of extra income. Charcoal producers rented huts in village compounds and paid for meals cooked on a monthly contract. The villagers later learned, however, that the cost of this commerce was the decline of their forest resources. Villagers saw that charcoal production ate away at the forests in which they hunted, and gathered firewood, fruit, herbs, honey and other forest products. They complained that woodcutting for charcoal was making these products scarce. The influx of *surga* also drew down the village wells and caused numerous tensions within the village. When villagers recognized these problems, most wanted to kick the *surga* out. But, they could not evict their tenants, who, they complained, often left after selling their charcoal without paying debts incurred for rent and food.

This pattern of charcoal production surrounding villages and devastating village forests, and subsequently undermining forest village economies, is not

unusual (Bergeret and Ribot, 1990; Dia, 1985, p. 43; Niang, 1985, p. 83). Nor is the pattern of villagers welcoming and then trying to evict charcoal makers — or trying to reject them in the first place, some succeeding and others not. It is not that the village is unable to evict the *surga* from surrounding forests. Villages often do so by threatening woodcutters with violence in the forests or by kicking them out of the village itself — *surga* need village access since there are no provisions or water in the forests.

Internal village stratification along with commercially oriented forestry policies help explain why Daru Kimbu and other villages do not evict charcoal producers. The decision to host *surga* hinges partly on the needs and powers of different factions within the villages. Villages are not uniform communities. Even when most villagers want to evict their unwanted guests or to conserve the forests, the choice rests largely with the village chief. This choice in turn is shaped by the chief's relation with villagers and the ways in which the village and chief are embedded in larger legal structures, such as forestry and land law, and political-economic relations among foresters, merchants and other powerful political and religious

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figures. The majority of villagers have little voice in the fate of surrounding forests. Given the pressures by powerful merchants, the forest service and other notables, even the chiefs may not have much choice in the matter.

Over the past decade the idea of local participation in resource management has become popular in development circles (Uphoff, 1977; Satish and Poffenberger, 1989; Peluso, 1992; Banerjee *et al.*, 1994). Notions of participatory management have recently gained tremendous popularity in the Sahel (Freudenberger, 1993, pp. 68, 75; CILSS and LTC, 1993; see also Vedeld, 1992 for pastoral systems; Cleaver and Schreiber, 1992 for agriculture). Participatory approaches to forestry often aim at devolving decision making over and benefits from forests to rural populations, along with responsibilities for forest management. Such devolution is predicated on a number of assumptions about higher efficiency of local resource management due to greater local knowledge, lower transaction costs due to proximity to forests, better decision making due to the internalization of social and ecological costs (such as the loss of subsistence foods, fodder and game) into commercial forest decisions, etc. Equity arguments are also often made, supporting participatory approaches to redress past village exclusion and encourage rural development. Devolving control of or benefits from forests to local populations, or even just incorporating their labor into forest management in a manner that addresses these goals, is a complex matter.

Senegal has adopted a new participatory approach to forestry aimed at redressing a long history of village exclusion from forest commerce and at redressing social and ecological consequences of woodfuel production. But this new approach will be applied in the same institutional and political-economic context that shaped current socially skewed and ecologically deleterious outcomes. To help assure the new code's success, to assure it does not reproduce or even deepen past trends, this article focuses attention on the social and political-economic dynamics behind current patterns of access to forests and forest product markets.

The central argument of this article is: (a) benefits of Senegal's woodfuel trade accrue to powerful merchants and their foreign migrant woodcutters, rather than forest villagers who bear the ecological and social costs; (b) this skewed distribution of benefits results from forestry policies that support powerful urban-based merchants' control over forest labor opportunities and access to woodfuel markets; (c) these powerful actors gain access to village forests through relations with village chiefs, despite objections by most villagers; (d) their access to village forests is supported by forest "management" policies and facilitated through economic and social influences of the merchants over chiefs; (e) the result is the spatial overlap of commercial and subsistence forest uses,

the cutting of forests surrounding villages, and subsequent undermining of village economies that depend on forests for daily needs.

The article also shows that the causes and effects of woodfuel cutting and deforestation are poorly understood by foresters and villagers alike. While rural populations and their woodfuel use are often blamed for deforestation, social and ecological consequences of woodfuel extraction stem more from urban than rural uses. But, woodcutting does not even cause permanent deforestation, due to robust regeneration. Hence, the main impact of the woodfuel trade is its temporary effects on forest villages during the years between cutting and sufficient regeneration for village needs. It is not "deforestation" writ large. While forest clearing is a problem for villagers, they are not always aware of the consequences of forest clearing until they are upon them — local knowledge is not omnipotent. This observation, in addition to the fact that forestry policies have systematically excluded villagers from commercial forestry since before the emergence of large-scale woodfuel markets, makes it impossible to evaluate whether villagers would conserve the resource if given the opportunity to exploit it.

If village participation in forestry is to render local benefits and resolve the current problems, village access to markets and labor opportunities, local decision making over the disposition of surrounding forests, and locally accountable representatives to whom this access and decision making can be devolved, are essential. Minimum forest management standards aimed primarily at sustaining subsistence use areas, would help to protect rural populations from the woodfuel trade — rather than forests from rural populations as has been the misguided policy of the past.

Section 2 of this article outlines some of the social and ecological consequences of charcoal production. Section 3 examines how a long history of progressively more centralized land and forestry policies shaped access to forests and forest product markets, and subsequently relations among villagers, migrant charcoal producers, charcoal merchants, and foresters. Section 4 explores the interaction of these policies with village dynamics as they result in the detrimental overlap of village and commercial forest uses. Section 5 discusses the new forestry code and some of its implications given the local and national social and legal context in which it is to be applied. The article concludes with Section 6.

The work presented in this article is based on two years of research in Senegal during 1986–94.

## 2. SOCIAL AND ECOLOGICAL CONSEQUENCES OF THE CHARCOAL TRADE

Charcoal is produced from wood for use as cooking fuel by Senegal's urban populations. While virtually

all of the rural population consumes firewood directly, over 90% of urban households rely on charcoal for all of their domestic energy needs. The urban choice of charcoal over firewood can be attributed to a mix of cost, convenience, and ease of transport. But, energy losses in charcoal production mean that more than twice as much primary wood is required by those cooking with charcoal as those cooking with firewood. Thus, the urban 30% of Senegal's population consumes close to half of the primary woodfuels used nationally.

Foresters and donors have consistently viewed woodfuel use by rural populations as a cause of deforestation (GGAOF, 1916; GGAOF 1933; RdS, 1993; cf Fairhead and Leach, 1993). But, rural firewood use depends on the diffuse gathering of deadwood, having little impact on the forests. Charcoal for urban markets is produced in a large-scale, intensive manner by cutting and carbonizing whole forested areas. Even urban woodcutting, however, cannot be implicated in permanent deforestation. The few existing studies of regeneration in the Sahel show robust regrowth after woodcutting (see, for example, Giffard, 1974; Clément, 1982; RdS, 1984; Arbonnier and Faye, 1988; Jensen, 1994).<sup>2</sup> Nonetheless, Senegal's forests cover approximately 70% of the country and are declining at about 1.2% per year (Gonzalez, 1992, pp. 38–39; World Bank, 1983, p. 22).

Observed deforestation is caused by a poorly understood mix of effects including, extension of agriculture, recurrent wild fires and drought. Senegal's foresters are concerned that progressive deforestation is a threat to woodfuel supply and other ecosystem functions, and that woodfuel demand plays a role in forest decline. While the latter may not be true, the Forestry Department and a number of international aid organizations, have been actively attempting to reduce perceived impacts of woodfuel demand since the mid-1970s. Their policies include stove and kiln efficiency improvements, substitution away from woodfuels, tree plantations and natural forest management.

With the exception of natural forest management, these policies aim to reduce the magnitude of charcoal production in natural forests, but natural forest extraction has continued to rise.<sup>3</sup> Village woodlots and plantations, efficiency improvements, and substitution with bottled gas have had only marginal success. Substitution with imported liquid petroleum gas made inroads, but the recent devaluation of the FCFA has made its cost prohibitive.<sup>4</sup> Natural forests, it appears, will remain the most important source of domestic energy in Senegal for the foreseeable future. Consequently, natural forest management strategies remain at the core of forestry policy.

Many of the ecological and social impacts of charcoal production in natural forests can be attributed to production immediately surrounding forest villages.

While studies conducted far from village pressures show that natural regeneration can be robust, continuous pressures of village use after commercial clearing compromises regrowth (Bergeret and Ribot, 1990; Dia, 1985; Niang, 1985, 1989). It is this overlap of subsistence and commercial forest uses that may result in longer-term forest degradation. Further, even though forests grow back, villagers cannot wait 4 to 12 years for the food, fodder, fuel, medicines, game and other products they derive daily from surrounding forests. Such cutting around villages causes severe village-level social and economic problems. By placing woodcutters around villages, management policies conceived in the name of resource conservation and use at the national level undermine the forests on which villagers depend.

Senegal's 1993 forestry code aims to integrate villagers into commercial forestry development, signaling a major change in past practices (RdS, 1993; RdS, 1994). It aims to redress the historical exclusion of villagers from forest control, and to enlist their participation in reforestation and in the protection of natural forest regrowth. The new code places Senegal's forestry strategy squarely in the center of the worldwide trend toward participatory approaches to resource management. But will this new code serve the needs of villagers or is it just a continuation of a long history of centralized control over the forest sector? Below, I examine the history of forestry policy, sketch some consequences of past and current practice for forest villages, and draw implications of and for the new participatory code.

### 3. POLICY AND THE POLITICS OF ACCESS

Over this century, land and forestry policies have shaped the relation among villagers, state agents and members of the charcoal market by structuring control over access to forests, forest product markets, and forest labor opportunities.<sup>5</sup> Access to state agents and officials has also influenced who has and controls access to forest benefits. Forestry policy and practice has progressively separated commercial from subsistence forest uses and users, and concentrated control over forest-based production and forest product markets in the hands of urban merchants. Progressively more centralized policies separated charcoal production and marketing from forest village control while relegating villages to a limited set of usufructuary rights.

#### (a) *Land law, forestry codes and local forest resources control*

Land laws, together with usufructuary rights placed forests under the control of the state while relegating

rural populations to a residual category of noncommercially valuable use rights.

In 1904, following the French Civil Code, the colonial administration decreed: "lands that are vacant and without master [owner or lord] in the colonies and territories of French West Africa belonged to the state" (République Française, 1904, p. 4). In 1906 the administration put into operation a system of registration for occupied lands, introducing private property into West Africa. In June 1964, four years after independence from the French, Senegal's governing socialist party passed the Law of National Domain, nationalizing all lands not registered or occupied prior to the date of institution of the law (Le Roy, 1985, p. 683). The implementation of the law, brought 97–98% of all lands in Senegal under state management (Gueye, 1985, p. 615; Le Roy, 1985, p. 669).

Forestry codes shaped forest usufructuary rights. In July 1900 the Colonial Service of Agriculture and Forests established the first forestry code for the French West African colony. The code outlined forest usufruct rights for local populations, while requiring permits for commercial exploitation of all forest products (GGAOF, 1916, pp. 3–7). With these first forestry and land laws, rural populations use rights were limited to noncommercially valuable forest products. Later forestry codes further limited usufructuary rights.

Under the Law of National Domain the entire forested domain and all commercial forest exploitation fell under the auspices of the Forest Service (Le Roy, 1985). The law affirmed continued usufructuary access to villagers (Le Roy, 1985, pp. 683–685; RdS, 1981, pp. 12–14). The law also gave rural councils — local governance bodies — the responsibility of managing their usufruct. It did not, however, give them the ability to protect the forests they used from commercial exploitation.

#### (b) *Access to commerce*

While forestry codes spelled out and limited village use rights, commercial rights were allocated through permits and later licenses. Commercial rights were ultimately allocated to urban merchants, clearly separating village from commercial uses, and villagers from control over access to commerce. Control over access to usufruct and marketing became progressively more centralized and more elaborate.

Control over entry to charcoal commerce has built up over the century starting with commercial production permits in 1900, and transport permits in 1908. In 1935, a new forestry code, based on codes designed for Indochina and Madagascar, extended state ownership and control of the territory's forests and forest products. The code further limited usufructuary rights, and specified penalties for infractions, permits

required for commercial production, etc. (GGAOF, 1935). In 1941, the Forest Service introduced merchant licenses available only to urban-based French citizens (Gellar, 1982, p. 17; GGAOF, 1916).<sup>6</sup> Further 1941 decrees gave the Forest Service control over the price at which charcoal could be sold (GGAOF, 1941, pp. 443–445).

In 1965 the colonial forestry code was revised to conform with the new Law of National Domain, and to add storage permits to the already existing production and transport permits required for woodfuel commercialization (Bertrand, 1985, p. 31; RdS, 1965a; RdS, 1965b). While earlier policies restricted who could enter, a 1972 law creating a limited number of Professional Licenses allowed the Forest Service to also restrict how many people were entering the market (RdS, 1972, p. 1539). This was then followed in 1980 by a quota restricting how much charcoal could be produced nationally, giving the Forestry Department the role of allocating the quota (another requirement for market access) among merchants (RdS, 1980).

In 1983 merchants were then required to form or enter cooperatives, reducing the task of quota allocation and simplifying market control. These cooperatives were difficult to enter, requiring political and social connections and considerable fees and bribes, making it difficult for forest villagers to gain access (Ribot, 1990). As entry to the market became more difficult and more centralized, the prospect for rural populations to independently market forest products became more remote.

#### (c) *Access to production labor opportunities*

Merchants, rather than local populations control access to labor opportunities. Forestry policy only permits woodfuel extraction and marketing under the license and within the quota of a charcoal merchant. These merchants work with migrant laborers, excluding village populations from charcoal production labor opportunities.

Charcoal production, as well as marketing, has been dominated by single foreign ethnic groups — Malian Bambara before WWII and Guinean Fulbe thereafter. The use of foreign migrant labor in charcoal is often attributed to taboos against charcoal production and the caste nature of charcoal producers (blacksmiths) among most ethnic groups in Senegal. Most villagers consider charcoal production dirty and lowly work and many Wolof (the second-largest ethnic group among merchants after the Fulbe) say that even the money earned in the charcoal trade is dirty or brings bad luck. But, many local villagers have also expressed interest in entering production and claim that no merchants will assist them or get them permits. Merchants prefer working with Guinean migrants, due

to long-standing social ties. The woodcutters are mostly of the same ethnic and national origins as the merchants and come to them through family or village relations.

This use of migrant labor further separates local villagers from commercial forestry. Not only do rural populations have little control over marketing or production, but, forest villagers rarely participate in either.

(d) *Access and implementation: multiple meanings of environmental policy*

The manner in which policies are partially applied, circumvented and transformed also helps consolidate control of forest access in the hands of select merchants, further undermining village control. Despite the history of policies aimed at managing and then limiting production and demand, both continue to grow. In general, policies are legislated, then unenforced, transformed or circumvented. In 1889 managed rotations to protect the banks of the Senegal River were not enforced, in 1916 foresters complained that permits were not delivered and cutting was not being monitored, during WWII the managed forest of Thiès was overcut, from the 1950s through the early 1990s protected forests were declassified at the request of powerful religious leaders, and in the 1980s and 1990s quotas were grossly overallocated. Today, most of Senegal's forestry policies are only partly implemented (GGAOF, 1916; GGAOF, 1941; O'Brien, 1971, pp. 223–224; Ribot, 1990; K. Freudenberger, 1991).

Some policies are simply difficult or costly to monitor, such as restrictions on cutting and carbonizing of protected species or green trees. Villagers and producers get around many policies through a mix of avoiding foresters and small payoffs. More easily enforced policies, however, such as the quota, the production season and parcel location, are only selectively enforced. Powerful merchants successfully appeal to multiple levels of authority, including religious leaders and politicians, to gain entry into the markets, access to restricted areas, quotas, and exemption from prosecution (Ribot, 1990).

Such incomplete enforcement seems to contradict the earlier arguments about evolving control and centralization. But, on closer inspection nonenforcement is itself an important dimension of access control. Policy nonenforcement can serve a number of ends. It allows a free supply of charcoal, serving the needs of merchants and urban end users, as well as politicians who take the heat in times of shortages.<sup>7</sup> In addition, allocation of licenses, permits and excess quotas, as well as exemption from prosecution for those not within the legal controls, is a selective form of access control. At the local level, it can be a way for forest

agents to extract small payments or favors by threatening to fine offenders or by letting them off. Higher in the market it can also serve as a mechanism for delivering access to marketing and production to select individuals, usually the more powerful merchants. It carries political, economic and social value for those who allocate, and those to whom allocations are made.

The ability to control and allocate resources provides incentives to maintain forestry policies that are not serving their nominal ecological functions. This, for example, helps explain the contradictory lowering of a national quota that is already far below demand. In recent years the quota, set during the late 1980s and early 1990s at only 50–70% of demand, has been lowered on ecologically based arguments by officials who know it is unenforced at its current low level.<sup>8</sup> The lower the quota, the bigger the difference between the quota and demand, the more resources — as in extra quotas — available to allocate.<sup>9</sup> At present extra quotas are being allocated — mostly to a small group of powerful merchants — and supply of charcoal continues to meet the growing demand. Through such mechanisms as quota allocation and access to licenses and permits, 20 of the markets 4,000 registered merchants control 50% of charcoal commerce (Ribot, 1990, p. 1993).

In the forests social relations and small favors or gifts, called *cogo goro*, “the price of kola nuts,” can partly account for much of policy circumvention, such as carbonizing charcoal off season, cutting green trees or protected species, or the illegal sale of confiscated charcoal (Ribot, 1990, p. 325). For example, at the village level, merchants having the appropriate relations with the Forest Service can influence the location of charcoal production plots or the amount of charcoal to be taken, while villagers may have little say (through official or unofficial channels) over the disposition of surrounding forests. In the cities, vendors fix their scales, varying the weight of the kilogram so as to allow the real price to fluctuate while keeping the nominal price fixed at the official level. Some vendors are fined others not. The selectivity in these areas is around personal relations, based on friendship, ethnicity or caste, as well as the ability to afford *cogo goro*.

In short, nonenforcement is by no means random. Selective allocation along social or political-economic lines adds to these benefits the ability of state members to cultivate alliances (cf Bates, 1981). In some manner agents and officials gain (economically, politically or socially) through control over allocation while powerful merchants gain through more exclusive control over marketing. Control over resources (of the state and of nature) is located somewhere in an affiliation of state and market members — some mix of official and unofficial conflict and cooperation over resource access and control. Selective nonenforcement and

ment and enforcement serves as another handle on control over access to usufruct, production and marketing of forest products.

#### (e) *Net results*

Over the history of charcoal production, migrant laborers cut and carbonize wood for urban or non-locally based merchants, selling to urban, industrial or government users. Local populations neither participate in charcoal production nor marketing. While regulations have not limited or reduced impacts of natural forest production, they do serve to tax the market, exclude rural populations from commerce, centralize control over production and marketing, provide handles on resource allocation (via licenses, quotas, permits, etc.), and support oligopsony conditions for those merchants with access to state officials and agents, and hence, state-controlled resources (cf Boone, 1992, p. 6–13). Government officials and agents allocate access to forests and to marketing, while nonlocal merchants control access to production work.<sup>10</sup>

The distributional result is that roughly 70% of the market's net profits accrue to merchants (urban wholesalers and rural traders combined), 20% to migrant woodcutters and 10% to urban vendors. Local villagers retain less than 3% — mostly from renting huts and selling food to the migrant woodcutters. Merchant margins (and consequently urban prices) are high due to the merchant oligopsony, with some merchants making hundreds of thousands of US dollars per year. Villagers lack of benefits is not about whether the woodfuel trade is lucrative or whether the final price of woodfuels is sufficiently high. Rather, it is about who controls access to the benefits that flow from the forests and how.<sup>11</sup>

#### 4. MANAGED FOREST PLOTS THE DYNAMICS OF VILLAGE PRODUCTION

Most components of Senegal's natural forest management are aimed at charcoal market regulation. We have seen how market regulations in conjunction with forest ownership and usufruct delimitations have configured relations among the Forestry Department, merchants, migrant charcoal producers and forest villagers. Within this context of villager separation from marketing and labor, the spatial management of production, through the assigning of production plots, also shapes village-charcoal producer relations. The Forestry Department designates production regions on a national scale, based on the condition of each region's forests. The local Forest Service offices assign production plots at the village level for each producer — specified on production permits. As part

of the management of charcoal production, the forestry agents of each Regional Forest Service choose forest plots where charcoal production is permitted. They assign each *surga* (charcoal producer) a plot. According to forestry officials, zones and plots are chosen based on the availability of standing dead wood and the ecological sensitivity of the forest and soil. Although the ultimate decision is the responsibility of foresters, the *patrons* (charcoal merchants) also influence where these plots are located. *Patrons* prefer them to be close to a village for easy access to roads and so that their *surga* can have a place to live and get provisions. Hence, plots are usually placed around villages.

Villagers, however, experience this management system — involving large-scale production rotations — as the progressive distancing and destruction of their forest resource base. In surveys and interviews in Daru Kimbu and four other nearby villages, women recounted that before the arrival of charcoal producers, firewood had been available just outside of the compounds, whereas after the first two years, firewood had to be gathered at distances of several kilometers taking from a couple of hours to half a day to collect. More than half of the women saw the distancing of the firewood resources as a direct result of charcoal production; many expressed resentment. They also explained that charcoal production led to the disappearance of game birds and animals, and the destruction of fodder (see also Niang, 1985, p. 83; Tall, 1974, p. 68).

Village women complained that the presence of migrant charcoal producers drew down the wells, creating water shortages and water quality problems, causing tensions in the village. Villagers recounted how heavy truckloads of charcoal evacuated from the villages during the rainy season — outside of the legal production season — tear up and rut the dirt roads so badly that villagers cannot negotiate them by horse cart, car or minibus, making it difficult for them to bring their products to market or to get to market for the products they need. They also spoke of charcoal producers leaving with debts unpaid, fighting with women gathering firewood, and “chasing women” in the forests. Other researchers report similar problems around Senegal — including scarcity of useful species and commodities — associated with charcoal production (Dia, 1985, p. 43; Bergeret and Ribot, 1990). Well over half the women interviewed wanted the charcoal makers out of their village and out of their forests, so that their forests could grow back. As one woman commented: “They will leave when there is no more wood. That will be soon.”

Villagers, charcoal makers and foresters also recount numerous conflicts between villagers and charcoal producers. Some have been violent (see also PARCE 1983, 17; M. Freudenberger, 1993, p. 63 on conflicts over gum Arabic collection).<sup>12</sup> In most cases,

the villagers wanted the charcoal makers to leave or to pay debts they had incurred, and fights broke out. In instances I witnessed, underlying tensions emerged over issues such as theft and adultery. In the early 1970s, according to forestry officials, frequent conflicts between charcoal makers and villagers led the Forest Service to adopt an informal policy obligating charcoal *patrons* to gain the consent of the village chief before carbonizing in the area surrounding a village.<sup>13</sup>

This consent policy is no longer practiced due to the role of the foresters in assigning plots. While assigning plots is not new it has only recently been practiced outside of a few isolated managed forests. The choice of location is now considered a professional decision for the forestry agents to make. The agents do not generally ask the village chief for consent. Consent is usually, nonetheless, arranged informally between *patrons* and village chiefs, involving a payment of about US \$14–28 on each truckload of charcoal produced in their area.<sup>14</sup>

Before managed or assigned plots were instituted in the mid-1980s conflicts between *surga* and villagers had a better chance of pushing charcoal production out of a village forest. Assigning of production plots by the Forest Service now tends to support the presence of charcoal producers. Conflicts still arise between villagers and charcoal makers. Some are arbitrated by the village chief, some by merchants and some by the forestry agents. Unfortunately, with charcoal producers having official sanction to produce on assigned plots in national forests, villagers have little if any recourse when foresters are behind the charcoal makers and merchants, and the merchants are behind the chief.

While the majority of villagers may want charcoal makers out, the village is stratified, and the more powerful villagers, most notably the chief, make the final call. Village men, in addition to chiefs, benefit from charcoal production by renting out their huts, mule carts and having their wives cook meals on a monthly contract. Here women's labor is expropriated by men who collect the rent but perform little if any related work. In addition to financial incentives to admit woodcutters, powerful religious leaders (*marabouts*) and political figures, often allied with or including charcoal merchants, hold sway over village leaders through gifts or social status (cf O'Brien, 1971; Schumacher, 1975; Berry, 1989). With village elites and many village men benefiting from the charcoal trade, resistance and frustration emerges as isolated conflicts between villagers and charcoal producers.

Not surprisingly, it is the same merchants in whose hands the legal system places control over access to forests and forest product markets who use their influence, and draw on their religious and political ties, to enlist the cooperation of villages. It is the broader political-economic relations shaped by and shaping policy that traverse the village boundary to gain con-

sent of village elites to facilitate access to the surrounding national domain forests. In this manner the legal environment and internal village dynamics align to support access for the charcoal trade. The net result of this mix of legal structures and power relations is that production plots are assigned and production occurs immediately surrounding villages. Internal village stratification supported by the external political-economic relations and the legal environment subvert resistance and production continues.

While the Forestry Department may conceive of the plot-assigning policy as a move toward "rational" or sustainable forest management — production organized in assigned ecologically based rotations — the location around villages may make these practices ecologically and socially undesirable. Because villagers cannot wait for the trees to grow back before grazing cattle or gathering firewood to cook their next meal, regrowth after cutting is hampered by continuous village use. The temporal scale of regeneration combined with the extensive spatial scale of urban-bound production leaves villages at the center of a degraded forest, unable to sustain themselves without maintaining a now damaging pressure on the diminished forest resource. Woodcutters cut the forests and leave. Villagers are left to suffer during a longer regeneration period, slowed by the continuous pressures of local use.

The seemingly obvious clash of temporal and spatial scales is not taken into account in forestry management policy making. Clearly, the overlap of national-scale production rotations and continuous village need is incompatible. This incompatibility is not a surprising result of unequal village power relations, village exclusion from commercial forest uses, a production-oriented policy process, as well as research developed in response to commercial, urban and state constructions of forestry problems, rather than village concerns. Under these circumstances, even when villagers in Daru Kimbu become perfectly aware of the damages of charcoal production, it is no surprise that they do not evict the charcoal producers. But the result is not just that villagers are powerless — this is nothing new. The result is that villagers overshadowed by state and market interests are hindering the very productivity in which these interests are ostensibly concerned. The village invisibility, the structure of outside interests and the coopting of village elites that facilitated market-oriented forest exploitation in the past may be undermining forest regeneration today.

## 5. THE NEW CODE: FROM EXCLUSION TO PARTICIPATION?

Following discussions among Senegal's foresters begun in the mid-1980s, progressive agents and offi-

cials of the Forestry Department and MPN formed a working group in 1991 to develop a participatory forestry code. In January of 1993 the new code was ratified by Senegal's National Assembly (RdS 1993). The new code recognizes the need — or at least the efficacy — of including villagers in forest management. While it is now written into law, the details of its implementation are still being hammered out (RdS, 1994).

The new code transfers some control over and responsibility for local forests into the hands of rural populations, under the supervision of the Forest Service. Villagers will be represented in these arrangements through their Rural Communities. The Rural Community, Senegal's smallest unit of local governance, is the "base community," or "grassroots," of rural political and administrative functions of the Senegalese Government. Senegal's 317 Rural Communities each regroup between 10 and 15 villages. Each Rural Community is governed by a Rural Council, elected from lists of candidates presented by nationally registered political parties for election (independent candidates cannot run) (RdS, 1972a; RdS, 1992).

In the new code, the Forest Service maintains considerable control over the forests and the sale of forest products. Indeed, usufruct rights are essentially the same as before (with the added obligation to replant), and the sale of all forest products still must be approved by the Forest Service. But, Rural Communities, under the stipulation that they maintain the forests, can sell rights to harvest forest products approved of by the Forest Service (RdS, 1993, chapter 1). According to the new code rural councils will be able to sell rights to cut trees on plots of national domain forest in their locality if they agree, by drawing up a forest management plan with the Forest Service, that they will reforest and protect regeneration "using silvicultural techniques" (RdS, 1993, p. 2, article L10).

This devolution of rights to sell is not symmetric. Rural Communities do not have the legal right not to sell. If the Rural Council decides it wants to conserve, rather than cut the forests, the forest service can legally give forest concession to outside commercial interests. Such concessions are effectively the practice today. So, rural populations risk losing their forests if they choose not to participate in commercial production. They do not have the right to say no to commercial production in surrounding forests. So, their only recourse will be to resort to illegal resistance, as some villages are already doing by excluding woodcutters from villages and threatening them in the forests.

The balance of costs and benefits to villagers of participation in the new arrangements is not clear. One very positive aspect of the new arrangements is that villagers will have greater access to woodfuel production labor opportunities than in the past, since Rural

Councils will be able to engage them in production. Like today's woodcutters, they will be able to make an income above the subsistence level. In addition, villagers will have some access to a National Forestry Fund fed by annual taxes and fees, less than 25% of which "...can be allocated to Rural Communities and local organizations, to public and private establishments, as well as to physical persons ..." (RdS, 1994, art.D55 — emphasis added). But, will the revenues from sale plus the return from the Forestry Fund balance the labor and materials necessary to replant and protect regeneration in those forests sold off and cut?

If current licensing and permitting practices are maintained — and indeed, they are not changed by the new code — villagers will be obliged to sell to the licensed merchants. Merchants currently fix low producer prices among themselves. Under these circumstances, villagers are unlikely to obtain a fair price for their product. They will gain new income generating opportunities, but they will not gain access to the enormous profits that merchants now reap.

If the poor performance of most reforestation efforts in the Sahel is any indication of the difficulties involved in reforestation, then the responsibility being given to villagers is a large one (see, for example, Fortmann and Bruce, 1988; Lai, 1986; Leitmann, 1987; Gritzner, 1988, p. 82; Tibesar and White, 1985, p. 19; Laurent, 1985, p. 29; Rocheleau, 1991). The revenues from sale and from the Forestry Fund may be less than sufficient to cover added labor costs. If the producer price is not raised, there will be little room for villagers to charge for their forests — forests that are currently a free good. The producer price now covers only the labor of charcoal making. It does not cover protection and management of the resource. In short, the new code transfers responsibilities, burdens and risks to village populations even if no benefits accrue.

There is little to prevent Rural Councils from agreeing to sell forest plots for much less than it will cost to manage them: (a) most rural populations have little experience with tree planting and may underestimate the time and resources required for reforestation; (b) like Daru Kimbu, they may not realize the negative consequences of the charcoal trade until well after they have agreed to let producers in — once a rural council enters into a formal agreement, they may be unable to change their minds when they see the extent of the damages that charcoal production represents; (c) immediate need of cash by councilors and the community may skew their cost-benefit calculus; (d) competition from other rural communities willing to sell off plots for very little, having underestimated the cost of reforestation or desperate for immediate revenues, may bring sale prices down; (e) pressures from charcoal merchants and the Forest Service may push rural communities to enter into contracts that are not in the community's best interest — especially when the merchant requesting access is an important social, reli-



gious or political figure from their region; and (f) as has happened in the past, forestry officials and other administrators may veto plans that favor less over more powerful interests (see, for example, M. Freudenberg, 1993, pp. 70–71; O'Brien, 1971, p. 224).<sup>15</sup> This latter threat is critical, since refusal to go along with foresters could result in concessions being given to outside interests.

Unequal distribution of costs and benefits within the community may also skew decisions to enter forest production agreements. Those making arrangements — male councilors, for example — may not be the ones who will bear the burden of replanting and of watering or guarding these planted forests, or for that matter, cooking, cleaning and drawing water for the charcoal makers during production. There are already splits within villagers over the current situation. Villagers are in unequal and exploitative gender, caste, ethnic and authority-based relations with each other. For example, men are paid for lodging and food, while women collect firewood, bring water from the wells, cook and keep house for charcoal producers living in the village. The councilors, like the village chief in Daru Kimbu, may invite in charcoal makers while most villagers do not want them there. Given pressures from foresters and merchants along with the standard payment on each truckload of charcoal, councilors may allow this commerce to continue. Given existing stratification, there is a risk that woman's labor will pay for benefits that accrue to men and that whole villages will continue to pay for benefits to a few.

Rural Councils may be no more accountable to rural populations than are the village chiefs. Rural Councils, like village chiefs, are embedded in dependent relations with merchants, foresters and political or religious figures. Further, since Rural Councils are elected by list drawn up by urban-based political parties, they are not necessarily locally accountable representatives. The Councils are not bound to internalize the costs of production falling on their constituencies, since the villages they ostensibly represent do not have a real choice in elections. Like chiefs, who inherit their posts for life, Senegal's Rural Councils are not locally accountable bodies. Hence, devolving control to Rural Councils may constitute local control, but it is not locally accountable control and will therefore not achieve the internalization of costs and benefits or the equity considerations on which participatory approaches are predicated.

The new code also introduces a handle on external exploitation of village labor. By entering into contracts with the Forestry Department to replant and protect regrowth, which is likely to involve much more labor than the benefits could justify, and could in some cases be an impossible task to accomplish, villagers may be rendered vulnerable to fines and other forms of coercion by rural administrators and foresters. The

outcome could be a new form of forced labor: *participatory corvée*. Villagers may be required to work or pay fines to pay for their failure to accomplish what foresters judge to be ecologically "sound" forest management. Or, they may accomplish such management at a very high human cost, unequally distributed within the villages. In short, the new arrangement devolves major risk onto villagers.

While there is a risk that villagers may be exploited under the new code, there is also a risk that villagers will overexploit the forests. It is the current and popular trend in development thinking to assume that transferring rights over forests to villagers will improve resource conservation and use (Banuri and Marglin, 1993; World Bank, 1993). But, local resource use may not be inherently conservative. Local populations may presently use the resource conservatively by dint of their exclusion from more damaging commercial uses. Since the inception of large-scale commercial forest product markets, villagers have systematically been excluded from exchange. Village forest use may be subsistence oriented because there is no choice: they have never been allowed to exploit the resource. They also may not be conservative due to lack of experience, pressing needs, competition from other villages, coercion, etc. — discussed above. The romantic construction of the conservative forest villager may be more part of the existing policies — as simultaneous justification and result — than a result of villagers' environmentally sensitive worldview.

To maintain forest productivity for subsistence ends while conducting commercial production in village forests, management must be based on both ecological and social uses of the forests. Forest resilience reduces the need for complex planning of reforestation and forest protection policies. It eliminates the need to limit the magnitude of woodfuel consumption and production, and hence to allocate production rights. The essential requirement of management is the establishment of minimum forest-use zones around or near villages to avoid the spatial overlap of commercial with subsistence forest use. Rural populations should be able to protect usufruct areas, grazing zones and sacred forests, and to benefit from forest cutting, carbonizing and sale. More elaborate forest protection and reforestation planning should be reserved for those communities wishing to augment natural regeneration.

Such goals can be accomplished through minimum forest management standards. With such minimum standards, Rural Councils could enter into the woodfuel trade simply by signing an agreement of understanding, attesting that they understand and will try to meet the standards in question. Signing this agreement would be a right of any Rural Community. With this agreement, the Rural Councils could receive annual production permits for an estimated volume of standing wood available in their area within the constraints

of these standards. All village and nonvillage-based commercial interests would have to come to Rural Councils if they were to gain access to village forests. If standards are not met, Rural Council's production rights (permits) could be revoked. Elaborating such standards and conditions for production is where the participation of rural populations should begin.

The critical elements of such a policy are simple: (a) Rural Councils must be able to make the ultimate decision as to whether production would take place within the Community's forests; (b) if they choose to produce commercially, they must do so within the agreed upon standards; (c) villagers must be fully informed (via translation of codes into local languages, through the media, and through village by village seminars) of their rights and options, and of the ramifications of charcoal production — including the losses it involves and the costs of forest management; (d) villagers must have multiple channels of redress in and outside of the Forestry Department to insure they can exercise the rights they are granted (see Esman and Uphoff, 1984); and, most critically, (e) the Rural Councils must be made locally accountable through the revision of the electoral codes.

To assure that these policies are equitable and beneficial for the rural population, attention will have to be paid to the distribution of costs and benefits within villages. This can partly be addressed through locally accountable representation. Rural populations must be represented in a locally accountable manner if their burdens and desires are to be internalized in decision making. Other forms of systematic inclusion of women in production decisions, such as a requirement that women and men must separately meet and approve any production decisions, are also needed (this technique is practiced in Burkina Faso's villages).<sup>16</sup>

Higher producer prices (perhaps through price fixing or producer organizing) and better access to marketing (through the elimination of the current license and quota system), would help increase local benefits. A fee on woodfuels chargeable by the Rural Council could be earmarked for community development: forest exploitation affects and should benefit the community as a whole. These policies, as opposed to elaborate Forest Service approved management plans, avoid creating opportunities for selective allocation of access to forests, markets, jobs or state controlled resources. They are based on rights, rather than allocated privileges.

For villagers to participate in more than the labor of replanting and managing regrowth, they will need to have access to the flow of benefits from Senegal's forests and to decision making over the forest's ultimate disposition — cut or conserved. In addition, they will need to gain access to forest product markets, for-

est labor opportunities and to a political process that allows them to enforce these claims. These essential additions to the new forestry policies would constitute a stronger foundation for beneficial participation.

## 6. CONCLUSION

The discipline of political ecology has touched on the importance of control over access to natural resources as essential in natural resource management and environmental change (Blaikie, 1985; and 1989; Peluso, 1992; Bryant 1992; Peete and Watts, 1993). This article shows how some forms of access and access control influence forest use and its social and ecological outcomes in Senegal. It illustrates how access to markets and to the state can be as critical as control of direct access to natural resources in shaping social and ecological outcomes on the ground.<sup>17</sup> It also illustrates that in addition to changing legal rules of access to forests, changes higher in the market and in the market-state relation and in village-level hierarchies must be attended to if forest village communities are truly to participate in the stream of benefits from the forests they depend on.

Senegal's new forestry code certainly includes the participation of villagers. It is not yet clear, however, that this participation will be voluntary or worthwhile for the villagers involved.<sup>18</sup> It is also not clear whether this policy will really be a break from the past controls on forest access. It could, without careful attention, end up as a continuation of the long evolution of tighter controls over commercial forestry, adding a handle on village labor (for replanting and maintaining the forests) to current controls over who can produce charcoal, where and when they can produce it, who can market it, how many merchants can enter the market, how much they can market, and at what price they can sell — not to mention selective control over when and for whom these policies apply. Much care in planning and implementation will be needed to assure that the new code does not usher in an era of *participatory corvée*.

Even if benefits and decision making powers are devolved to local communities, participation without locally accountable representation is tantamount to charity, *corvée*, or even a modern reproduction of indirect rule. But it is not empowerment nor will it necessarily achieve the internalization of social and ecological costs into decision making — an accomplishment on which local control and participatory approaches are predicated. This study indicates that transferring control or benefits to local populations must address what is to be transferred and how, as well as to whom, that transfer will be made.

## NOTES

1. *Surga* usually refers to a dependent agricultural laborer.
2. My interviews with woodcutters and villagers in Senegal, Mali, Niger, and Burkina Faso in 1994 indicate that regeneration after firewood and charcoal production is robust. Woodcutters return four to seven years after cutting for firewood and nine to 12 years later for stems large enough to produce charcoal. Consistent with local assessments, Jensen (1994, p. 31) estimates that the optimum time for recutting wood for woodfuel production in Eastern Senegal is eight years.
3. See Ribot (1990) for a discussion of why magnitude reducing measures have had little effect.
4. Youba Sokona and Technical Advisor to the Minister of the Environment, personal communication, January 1994.
5. For a more detailed history of French West African forestry policy, see Ribot (1994).
6. The 1941 decree restricted production permits to French citizens. In effect, since by law the only Senegalese granted French citizenship were those living in the urban centers, this decree gave special privilege to urban merchants. The distinctions between urban and rural citizenship were abolished in 1946 (Gellar, 1982, p. 17; GGAOF, 1916).
7. Such shortages could result from limited quota allocation or other regulations, but the only known shortages to date result from merchants stopping transport to put political pressure on the Forest Service, i.e. shortages do not result from wood scarcity.
8. In 1994 the national quota was set at 628,057 Quintals (about 1.4 million sacks), while measured consumption was approximately 3.5 million sacks (RdS, 1994; Ribot, 1995). In addition, there was a readjustment of this quota in mid season in which the largest merchant in the market received 125,123 Quintals of the 300,000 Quintals added to the national quota (Sarr, 1994).
9. Government agents and officials can collect what Bates (1981) calls "administrative rents," by allocating these state-restricted resources (Bates, 1981; Krueger, 1974).
10. The dynamics seen here cannot be attributed to the intentions of officials and agents. Rather they stem from historically rooted needs and power relations in which production, marketing and the policy process take place (see Ribot, 1990; 1993; Boone, 1992). Given social, economic and political-economic pressures, obligations and needs, in addition to contradictions built into policies — such as the quota below demand — agents and officials cannot remain within the law.
11. For economic analysis of market see Ribot (1995, p. 6).
12. M. Freudenberger (1993, p. 63) attributes the violence to the breakdown of traditional dispute-resolution mechanisms with the imposition of colonial administrative structures.
13. M. Freudenberger (1992, p. 265) reports instances of government taking note of conflicts over gum arabic trees at about the same time.
14. Average annual income in Senegal at the time, 1987, was US \$420. The exchange rate was 350 FCFA/\$. These are 1987 dollars (World Bank, 1987).
15. M. Freudenberger (1993, pp. 70–71) points out that administrators have overridden local management proposals for forest conservation when these local decisions favored less-powerful pastoral groups over export-oriented agricultural communities.
16. See Carney (1993) and Schroeder (1993) on the complexities of changing gender relations of production.
17. This demonstrates that property rights will not necessarily confer benefits on populations without complementary access to markets and labor opportunities.
18. The notion of coerced or involuntary "participation" in participatory development projects is by no means new (Cohen and Uphoff, 1977, pp. 16, 91; also see Esteva, 1985.)

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