LOCAL FOREST CONTROL IN MALI:
AN INSTITUTIONAL ANALYSIS OF PARTICIPATORY POLICIES

A Forestry Sector Policy Report
January, 1995

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Center for Population and Development Studies, Harvard University

Directed by
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REVIEW OF POLICIES IN THE TRADITIONAL ENERGY SECTOR

RPTES

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Dr. Jesse Ribot
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## List of Acronyms and Abbreviations

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<th>Full Form</th>
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<tr>
<td>ARD</td>
<td>Associates in Rural Development</td>
</tr>
<tr>
<td>ASARED</td>
<td>Association pour la Sauvegarde et le Renforcement de la Démocratie (Association for the Safeguard and Reinforcement of Democracy)</td>
</tr>
<tr>
<td>CNCFA</td>
<td>Comité National Consultatif des Foyers Améliorés (National Consultation Committee on Improved Woodstoves)</td>
</tr>
<tr>
<td>CNESOLER</td>
<td>Centre National de l'Énergie Solaire et des Énergies Renouvelables (National Center for Solar and Renewable Energy)</td>
</tr>
<tr>
<td>CRRA</td>
<td>Centre Regional de Recherche Agronomique (Regional Center for Agricultural Research)</td>
</tr>
<tr>
<td>CSEP</td>
<td>Cellule de Suivi-Evaluation et de Planification des Actions du PNLCD (Monitoring and Planning Unit of PNLCD)</td>
</tr>
<tr>
<td>CTD</td>
<td>Collectivité Territoriale Décentralisée (Decentralized Territorial Collectives)</td>
</tr>
<tr>
<td>DNEF</td>
<td>Direction Nationale des Eaux et Forêts (National Bureau of Water and Forests-the Forest Service)</td>
</tr>
<tr>
<td>DNHE</td>
<td>Direction Nationale de l'Hydraulique et de l'Énergie (National Bureau of Hydrology and Energy)</td>
</tr>
<tr>
<td>DPP</td>
<td>Division des Projets et Programmes (Office of Projects and Programs)</td>
</tr>
<tr>
<td>FENR</td>
<td>Femmes et les Énergies Nouvelles et Renouvelables (Women and New and Renewable Energy)</td>
</tr>
<tr>
<td>GEI</td>
<td>Groupe d'Interet Economique (Economic Interest Group)</td>
</tr>
<tr>
<td>GGAOF</td>
<td>Gouvernement Général de l'Afrique Occidentale Française (General Government of French West Africa--The French Colonial Government)</td>
</tr>
<tr>
<td>IER</td>
<td>Institut d'Économie Rurale (Institute of Rural Economy)</td>
</tr>
<tr>
<td>IMRAD</td>
<td>Institut Malien de Recherches Appliquées au Développement (Malian Institute of Applied Development Research)</td>
</tr>
<tr>
<td>MAEE</td>
<td>Ministère de l'Agriculture, de l'Élevage et de l'Environnement (Ministry of Agriculture, Animal Husbandry and the Environment)</td>
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<tr>
<td>MCDR</td>
<td>Ministère du Développement Rural (Ministry Responsible with Rural Development)</td>
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<tr>
<td>MDRE</td>
<td>Ministère du Développement Rural et de l'Environnement (Minister of Rural Development and the Environment)</td>
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<tr>
<td>MEE</td>
<td>Ministère de l'Environnement et de l'Élevage (Ministry of the Environment and Animal Husbandry)</td>
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<tr>
<td>MMEH</td>
<td>Ministère des Mines de l'Énergie et de l'Hydraulique (Ministry of Mines, Energy and Water)</td>
</tr>
<tr>
<td>MMIE</td>
<td>Ministère des Mines de l'Industrie et de l'Énergie (Ministry of Mines, Industry and Energy)</td>
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<tr>
<td>MP</td>
<td>Ministère de la Production (Ministry of Production)</td>
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<tr>
<td>MRNE</td>
<td>Ministère des Ressources Naturelles et de l'Élevage (Ministry of Natural Resources and Animal Husbandry)</td>
</tr>
<tr>
<td>OAPF</td>
<td>Opération Aménagement et Production Forestière (Forest Management and Production Operation)</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
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<tr>
<td>PAN</td>
<td>Plan d’Action National (National Action Plan)</td>
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<td>PGRN</td>
<td>Projet de Gestion des Ressources Naturelles (Natural Resources Management Project)</td>
</tr>
<tr>
<td>PNLCD</td>
<td>Programme National de Lutte Contre la Desertification (National Program for the Fight against Desertification)</td>
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<tr>
<td>RDM</td>
<td>République du Mali</td>
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<tr>
<td>RC</td>
<td>Commune Rurale (Rural Commune)</td>
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<tr>
<td>RPTES</td>
<td>Review of Policies in the Traditional Energy Sector</td>
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<td>SEF</td>
<td>Service des Eaux et Forêts (Water and Forestry Service)</td>
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<tr>
<td>SRG</td>
<td>Structure Rurale de Gestion (Rural Management Structure--for woodfuels)</td>
</tr>
<tr>
<td>SYNTRUI</td>
<td>Syndicat National des Transporteurs Routiers Urbains et Inter-Urban Road Transporters of Mali</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
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<td>UNEP</td>
<td>United Nations Environment Program</td>
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Glossary

Classified Forest
Any forest in the national domain that has been subject to an act of classification as a park or reserve.

Competence
The domain over which an individual or institution has legal decision making powers. Jurisdiction.

Codes
The Francophone countries call their forestry laws forestry codes, reflecting the history Napoleonic code law in these countries.

Corvée
Tax extracted in the form of labor.

Decentralization
The process of devolving decision making powers to smaller and more deconcentrated administrative and representative bodies. This may include transferring the power to manage natural resources from the Forestry Service to a local Territorial Collective.

Deconcentration
The process of moving government agencies and services closer to the constituent and recipient populations. This may include such measures as having representatives of the Central Government or its Ministries at the level of the Arrondissement or Circle.

Groupements
Economic or social interest groups or organizations.

Legal Personality
Having legal status and legal administrative powers. A body that is given the power by the state to make decisions has Legal Personality.

Moral Personality
Having the legal status of a person, as in a corporation.

Protected Forest
Any forest in the national domain that is not classified. This includes all national domain forests other than parks and reserves.

Territorial Collective
These are geographic divisions, having a territorial domain, with administrative entities recognized by the central state, such as Regions, Circles, and Rural Communes.
I. Introduction:

Woodfuels constitute close to ninety percent of all energy consumed in Mali (RPTES 1994a:10). Virtually all households depend on woodfuels for most of their energy needs. While woodfuel production does not appear to threaten supply, it often has negative consequences for the forest villages from which woodfuels are extracted. Woodfuel extraction could, however, have positive consequences for rural populations if they could control the degree to which their forests are cut and could reap some of the benefits of this lucrative trade. This report examines the policies aimed at regulating the supply of woodfuels to the urban centers, with a focus on devolving control of forest resources to rural populations.

Mali's Forest Service has recently drafted and passed into law a new set of forestry regulations. These laws set the conditions for forest resource management, shape wood exploitation, transport and commerce, and fix tax rates (RDM 1994b; RDM 1994g; RDM 1994i). These laws will all be complemented by as-of-yet un-drafted application texts. Once in force, the new laws will shape rural populations' ability to benefit from and maintain the forest resource. The new legislation is clearly aimed at devolving greater control over forests to rural populations. Indeed, by giving Rural Communes (the smallest rural governance units) the right to protect all or part of their forest resource, these laws have made great strides in the direction of local control. But, there are many other factors that shape the devolution of forest resource control.

These new regulations are embedded in a complex web of new laws and administrative structures of the recent democratization, deconcentration and decentralization that Mali's new government is putting into effect. Mali's new forestry laws and institutional changes represent a move away from the previous policies of a highly centralized and repressive forestry sector. Historically, the Forest Service served to police and tax the rural areas. In this role it gained a highly negative reputation among Mali's peasantry. Indeed, the foresters were chased from the rural areas after the 1991 revolution. But, this highly negative role that foresters played in Mali in the past generated what seems to be the most progressive forestry laws in the RPTES countries. The new texts are a major step toward changing the role of foresters in Mali. The new texts cast them as extension workers supporting forest sector development. While this report critiques the new forestry texts in this report, this evaluation is aimed at moving the new laws further along the road on which the new forestry administration has already set out.

This report evaluates 1) the current organization of the woodfuel markets; 2) the state of information on distribution in the woodfuel sector; 3) how the new forestry laws shape access to forest resources; 4) the relation between these forestry laws and the new laws and institutions of the deconcentration and decentralization process; and 5) the report concludes with a listing of the policy options discussed in the text. This report is not about the micro-management of woodfuel production. It does not attempt to evaluate the current structure of village-level forest management. Nor is this an evaluation of woodfuel management projects. Rather the report focuses on the types of organization and the distribution of benefits within the woodfuel markets as the new forestry laws may shape them.

Below is a list of the most general policy options that follow from this analysis. These options are discussed in and woven into the text.
1. Repartition of the Forested Domain:
   A. Repartition the entire Protected Forested Domain of the State among the Rural Communes (smallest governance unit) only. Following such repartition there will no longer be a Protected Forested Domain of the State.
   B. De-classify forests Classified as production reserves. If a Classified forest is earmarked for production, de-classify it and repartitioned it among the Rural Communes in which it falls.
   C. Revise articles one through six of the "Projet de Loi Portant Principles de Constitution et de Gestion du Domaine des Collectivités Territoriales Décentralisées" to assure that the repartition of the forested domain and of the goods within it will not be carried out in an expressly top down manner. Make explicit and then present for public discussion the process by which the division of the forested domain of the CTDs will be affected.

2. Devolve Rights to Commercialize Forests to Local Communities Only:
   A. Require Rural Commune's approval for all commercial production within the Rural Commune's boundaries.
   B. Require approval of village level representatives (village council, chief, or some alternative form of representation) prior to any production within the forests surrounding a village.
   C. Create locally accountable representation in Rural Communes to which resource control can be devolved.
      - This requires revision of the Electoral Code to admit independent candidates. If this is not done then the CTDs will not represent local populations. If they do not represent local populations, devolving control to them will not constitute local control.

3. Introduce and Support Equal Access for Women to the Benefits being Reaped from the Commercialization of Woodfuels.
   A. Focus "accompanying measures" on reaching women.
   B. Focus iterative policy review (see below) on the inputs of women, being sure to examine with them the question of their access to opportunities in woodfuel commercialization.
   C. Include women in these activities by conducting separate meetings with women and men when conducting information diffusion and in decision making. (For an example of where this separation method works see Burkina Faso, Ribot 1995a.)
   D. Include women proportionally in representation and decision making powers.

4. Replace Requirement of Management Plans with Minimum Environmental Standards and Agreement of Understanding:
   A. Eliminate requirement for management plans for commercial production of woodfuels.
   B. Establish Minimum Environmental and Social Standards.
   C. Require Rural Communes and Village representatives to sign Agreements of Understanding of standards and guidelines prior to commercial production.
5. Replace Quota with Production Ceilings:
   A. Eliminate all quotas based on limiting production on a national scale.
   B. Use locally based production ceilings to determine the maximum allowable production
      within a Rural Commune based on natural regeneration rates and other local uses of the
      resource.

6. Use Management Plans for villages and CTDs wishing to produce more than can be
   attained through natural regeneration:
   A. Rather than requiring management plans, management plans should be elaborated
      between Rural Communes and the Forestry Service for Rural Communes wishing to
      augment their production beyond the natural regeneration rates.

7. Create Channels for Redress:
   A. Set up accessible channels of redress, outside of the forestry sector, for disputes over
      the interpretation, use and implementation of forestry policies.

8. Create an Ongoing Iterative Public Process of Forestry Sector Reform:
   A. Create a process for rural input into forestry sector policy review.
   B. Conduct periodic public reviews of forestry practice and law.

9. Replace Spatially Limited Projects with Enabling Policies:
   A. Favor policy reforms over spatially limited projects.
   B. Support these reforms through accompanying measures.

10. Accompanying Measures:
    A. Support generalized law making, the establishment of rights and accompanying
        measures. Avoid projects that are limited in space and time. Get away from the project
        approach and head straight for a general application of the new regulations.
    B. Translate codes into all national languages--written and non written (for non-written
        languages use phonetic transliteration).
    C. Disseminate texts to all villages in Mali.
    D. Conduct text readings and discussions designed around simplified explanations of new
        rights that texts confer.
    E. Train foresters as to the meaning and implementation of new laws, and as to their new
        extension role.
    F. Create information diffusion system. Have periodic radio announcements of the urban
        prices of woodfuels, just as grain prices are announced by the Ministry of Agriculture.
II. Woodfuel Sector Actors and the Organization of Production and Marketing:

The woodfuel markets of Mali are diverse. This diversity differs from the other RPTES countries in that Mali is the only country in which the state has not attempted to organize or professionalize the woodfuel trade. Below I will outline some types of production and exchange organization existing in the market. This is helpful in illustrating who is currently deriving an income within the woodfuel trade. This sketch is not complete. It is based on scattered interviews with woodcutters, transporters and wood vendors (in August 1994), and on the available documentation.

This section and the following section focus on the supply of woodfuels to Bamako since this is the largest city and because it is the city for which the best data are available. The comments on the organization of production and composition of actors in the market differs from city to city, but the analysis of policies applies globally.

A. Vertical Organization of the Market:

Figure 1 shows the vertical organization of Mali’s woodfuel markets. The market is not linearly organized as presented, rather it is composed of actors with differing degrees of vertical integration. There are woodcutters who sell an occasional bundle of wood by the side of the road, and there are those who rent trucks and sell their products in the cities. There are retailers who buy wood from arriving truckers and those who hire and send to the villages their own urban based woodcutters. The following sections examine social makeup and production relations in the market.

B. Practices in the Woodfuel Market and Access to Woodfuel Resources:

1. Local Authority and Access to Woodfuel Resources:

Bertrand et al. (1992:102) show that laborers in 68 percent of the villages supplying woodfuels to Bamako are uniquely from the village where the cutting is done; 2 percent of the villages have uniquely migrant laborers, and in the remaining 30 percent of the villages wood is cut by a mix of local villagers, neighboring villagers, migrant laborers and salaried woodcutters. When Bertrand et al. (1992:103) asked woodcutters ‘who grants access to forests for woodcutting’, 48 percent of the interviewees responded ‘no one’, 18 percent said ‘the whole village’, 8 percent said ‘certain village families’, 6 percent said the ‘village chief’ and 18 percent ‘did not specify’. When asking the same question in Ségou they found that 95.5 percent of those in Ségou said ‘no one’ and 4.5 percent did not specify, and in Mopti 100 percent of the respondents said that no one granted permission. The author’s speculation is that the difference between Bamako and the other regions is that as the value of woodfuels increased control over who allocates the resource became more important.

It is not clear from the Bertrand et al. (1992) report whether these responses represent what villagers think is the official law of the state or whether they are trying to answer the

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1 Unfortunately, in the presentation document of the new forestry laws, professionalization, rationalization and organization of the woodfuel markets is presented as a primary goal (RDM 1994e:3-4).
Forest Resources
Rural Populations

Indigenous Village Institutions Mediating Resource Use
(All Lacking Legal Standing)
Village Council of Elders
Baorou, or Chief of the Village Council of Elders
Village Chiefs
Land Chiefs (Chef du Terre)
Forest Chiefs (Maitre de la Brosse)
Ton, or Village Associations

Examples of Resource Management Institutions:
-Ogokana, -Alamodiou, -Walde Kelka

State-Sanctioned Mediating Institutions
CTDs--Rural Commune
GIE--Economic Interest Groups
Cooperatives
SRG--Rural Woodfuel Management Structures

Woodcutters/Charcoal Makers
From Village--Mostly Women
From Neighboring Villages--50:50 Women and Men
Rural Migrant Laborers--Mostly Men
Urban Migrant Laborers--Mostly Men
-Paid by Production--Men and Women
-Salaried--All Men

-Sale to Truckers/Merchants in Forest

Rural Carte Owners
-Transport to from Forests to Roadside
-Sale By Roadside
-Transport and Sale of Own Product to Cities

Rural-Urban Transport
Truck Owners
Truck Drivers
by
Trucks, Pickups, Ass Cartes, Animal Back, Bicycle, Foot

Woodfuel Merchants
-Own Transport
-Rent Transport "Locateurs"
-Buy from Producers
-Buy at Roadside
-Pay Laborers to Produce

Woodfuel Coxeurs or Wholesaler-Distributors
Woodfuel Vendors
Bulk Retailers
Retailers
Woodsplitters
Guardians

Urban Woodfuel Consumers

Figure 1: Vertical Organization of the Woodfuel Trade
question of who, in the absence of state authority, allocates access to forest resources. While villagers may be aware of customary practices of forest access control, they may not mention them if these practices are not currently active. If customary authority is to be evoked by the decentralization process, that is, if these customary authorities are to be recognized by the CTDs, it would be appropriate to ask woodcutters as well as other villagers 'who currently and who in the past has had authority over access to forests or to other valuable natural resources'. Alternatively, it might be appropriate to discuss with the community who should make these allocation decisions if the state were to give villages greater autonomy concerning resource use decisions.

In short, it appears that there are local institutions currently involved in forest resource allocation. These institutions appear to be latent until the question of allocation becomes relevant due to the evolution of the commercial value of the forest products.

2. Gender and Access to Woodfuel Production and Commerce:

With the commodification of woodfuels it appears that women are less and less represented in the woodfuel trade. Woodfuel gathering for subsistence use is almost entirely done by women. The growth of commercial woodfuel cutting has attracted men into the trade. Among the woodcutters cutting in their own village territories women still constitute the vast majority. Among villagers working in neighboring village territories women make up fifty percent. Even among the migrant woodfuel cutters 29 percent of the respondents said that they work in groups of mixed gender, though 71 percent work in groups of men alone. (Bertrand et al. 1992.)

Bertrand et al. (1992:104) observed that while women are well represented in woodfuel cutting they are not at all represented among the salaried woodcutters--who usually work for urban merchants (also see Magassa 1989:24-30,39-41; Sankare 1989:41; UNEP 1990:30). This may well be related to more general problems women experience with access to wage labor opportunities, and constraints on working farther from the household. This question needs more attention. Why are women excluded from the woodfuel trade as the trade becomes more commoditized, more lucrative, or more distant from the household? The progressive exclusion of women from sectors where goods move from the subsistence to the commercial sphere or where trade in the goods in question become lucrative is widespread (see Carney 1988; Schroeder 1993).4

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2When these surveys were conducted in 1989, the legal response to the question would have been 'the Forestry Service'. If the question was posed in such a manner that this would be a possible answer, these responses could reflect ignorance of the laws on the part of the rural populations. But, as another researcher commented, 'I did not find that people were ignorant of this aspect of the Malian Forest Code in Central Mali. I would be surprised of they had been in the South as well.' (Personal communications, McLain, September 1994.)

3See Magassa (1989) for an excellent discussion of the different roles and the evolution of the roles of women and men in the woodfuel trade in Mali.

4Note that in Burkina Faso forty percent of the project woodcutters were women. This may be attributable to the structure of representation in Burkina Faso's villages. Understanding why such high participation of women in woodfuel production is occurring is important for generalizing such successes as this.
3. Labor Arrangements and Access to Woodfuel Resources:

Within Mali there are multiple forms of labor organization and labor contracts present in woodcutting and carbonization activities. There are in Bamako’s woodfuel markets producers who work as independent woodcutters, these are villagers who cut and sell wood on their own or in working groups (Bertrand et al. 1992:109; Bertrand et al. 1984: Cisse and Bertrand 1985: Magassa 1989:26; UNEP 1990:28; RPTES 1994m:34-35). There are merchant-organized woodcutters who are hired in the rural areas or in the cities by woodcutters either for a salary or through labor tying arrangements via advance subsistence loans (Magassa 1989:27). There are migrant woodcutters who work for themselves, as do independent villagers, or who work with a merchant on a contract. There are sharecropping woodcutters who work in the household of a rural patron for four days a week and then work for themselves the remaining three days of the week. These woodcutters may cut wood for their patrons or do other chores, including agricultural labor, in exchange for a place to live and for food during the period they are cutting wood or carbonizing. There are also state-organized woodcutters. These are groups organized by the Forest Service or by international aid projects. The diversity of production organization and of production contracts has not been studied. It is not known what portion of workers depend on a rural or urban merchant or money lender for subsistence advances or are independent operators. Here, the question of access to credit is important for whether a peasant can independently enter into woodfuel production. Credit is an even greater issue when it comes to peasant entry into woodfuel transport and marketing (see below).

The significance of different labor arrangements and different social or geographic origins of laborers is in their differential relation to state vs. local authority. Those laborers from within the village and those migrants appealing directly to the villages for access to forest resources are more likely to be subject to the constraints of customary authorities. Those workers depending on urban patrons may more readily appeal to state authority to legitimize their presence in the forests surrounding a given village. When resource control is transferred to the CTDs, it is these outside groups who will be most affected by changes in authority. The relation between the new Councils of the CTDs and the large operators in the woodfuel markets should be closely watched after the transition of control over the forest resource takes place. The manner in which these merchants lobby CTD councils and the resources they bring to influence them are likely to have a strong effect on the patterns of forest resource use and the concentration of benefits in the woodfuel sector.

C. Transport from the Forests to the Roadside and Roadside Sales:

Woodcutters use ass or horse carts to bring woodfuels from the forests to the roadside for sale or long-distance transport. Villagers interviewed asked how they could get credit to

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5There are also village working groups that form for the cutting and collection of firewood. There are groups of village men who cut wood together (interviews), and women constitute working teams to gather firewood for subsistence and for commercial ends (Magassa 1989:24).

6The observations presented in this paragraph are from discussions with woodcutters, transporters and vendors during August 1994.
purchase carts so as to facilitate their work. Currently they either walk the wood to the roadside on their heads or they rent a cart and are charged by the cartload for the transport.

In interviews of woodcutters selling their wood by the roadside, woodcutters thought prices for wood in Bamako were well below those actually being received in the city. It is clear here (and in the other RPTES countries) that woodcutters in rural areas do not have accurate information on the prices received for their products in the urban areas. Indeed, mis-information is systematically provided by wood merchants. If they knew the actual prices, they may be more motivated to sell their own product in the urban markets.

D. Transport to Cities:
   1. Diversity and Competitiveness:

Woodfuel transport is diverse, including tractor-trailers, trucks, pickups, cars, ass and horse carts, pedestrians, canoes and trains. This evaluation of the market considers transport as an external cost to the woodfuel sector, rather than calculating the expenses and profits for transporters. The reason to count this as an external factor within the woodfuel markets is that a large portion of the transport is paid by the producers or the wholesalers as a purchased, apparently competitive, factor of commerce.

In interviews in Bamako, transporters explained that transport of woodfuels is paid as a function of the distance the product is to be transported. The transport of woodfuels is not different from the transport of other goods, in that woodfuels are transported at the same price as other goods (urban interviews, August 1994). Trucks can be rented from transporters by merchants interested in woodfuel transport. The truckers call their rental clients renters or “locateurs.” Anyone who can pay the costs can rent a truck. In addition, transport in Mali is available to the woodcutters. Woodcutters are able to pay transport by the stère or by the sack. During my interviews the price of pickup truck transport was at 500 FCFA per sack and 350 FCFA per sack for trucks. They pay the higher price for pickup trucks because they don’t produce enough to fill a large truck before they are in need of cash, or because they are not organizing among themselves. Villagers claimed to usually be able to find trucks to pay to transport their wood and charcoal. Given this apparently relatively free entry and the diversity of transport modes, unlike the three other Francophone RPTES countries, the transport of woodfuels appears to be competitive.7

Between 30 and 608 percent of truck transport of woodfuels into Bamako is by trucks specializing in woodfuel transport. This raises the question of whether the market is moving in

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7Bertrand et al. (1992:125) asked transporters about how competitive the market is and found that 66 percent of the transporters reported that there was not much competition. The meaning of these responses depends, however, on what transporters understood by “competition.” When I asked transporters whether woodfuel transport is more or less remunerative than the transport of other goods, the response was that it was exactly the same. The transporters said that the price depends on distance and not on what you put in the truck. Hence, I would conclude that woodfuel transport is no less or more competitive than the transport of other goods. Whether the transport sector as a whole is competitive is another question for which there is insufficient data to answer.

8Over 60 percent of the truck owners claimed that their trucks were specialized in woodfuel transport, while only 33 to 40 percent of the drivers claimed that the same trucks were specialized in woodfuel transport. See Bertrand et al. 1992:121.
the direction of more concentrated and organized control over woodfuel transport. Do the transporters organize among themselves? Do they fix prices? If the market becomes more "professionalized," will this result in an oligopolistic structure for woodfuel transport as in Senegal? Are there any measures that can be taken to avoid such oligopolistic organization?

Magassa (1989) claims that mechanical forms of transport (bicycles to trucks) are not available to women. However, Sankare (1989:41-42) points out that women are financially involved in woodfuel transport. They rent, as individuals and often in groups, train wagons, trucks, pickups and ass or horse carts, particularly for transport to Bamako. He points out that they rent in groups due to the high costs of renting large means of transportation.

The transport of woodfuels, particularly for the city of Bamako is evolving toward greater domination by larger motorized vehicles. This trend, however, does not mean that non-motorized transportation is diminishing. While horse-cart transport dropped from roughly 12 percent of Bamako's commerce in 1978 to 7 percent in 1990, the absolute quantity transported by this mode rose from 18,600 to 22,300 tonnes per year (Bertrand et al. 1992:4:98). Hence, the domination by larger transport does not seem to be spelling the end to non-motorized forms of transport. Non-motorized forms of transport will probably stabilize, rather than disappear, as production of woodfuels within their radius of operation stabilizes.

An evaluation of the origin of wood coming from within the radius of operation of these cartes provides an opportunity to evaluate whether wood is being produced in agricultural fields for commercialization, whether wood production intensifies close to cities due to the value of the product, and how within these intensively pressured areas people manage to meet their household needs and to export wood for urban use. The fact that cart transport is expanding implies that these highest pressure areas continue to be productive. Much could be learned about woodfuel production by examining how and why this is the case.

2. Barriers to Entry into Rental of Woodfuel Transport--credit and a developed clientele:

While the rental market may be competitive, there are several barriers to entry for small producers and new merchants. First, those without the cash up front cannot always find a transporter who is willing to rent the truck on credit, even when the producer has a guaranteed buyer in the city. Second, upon arrival in the city, transporters want their trucks to be unloaded immediately. Those producers or merchants without a developed clientele may need to circulate with the product in the city to find buyers. This can be expensive in terms of the truck rental and fuel. Third, many vendors buy woodfuels on credit, consignment, delayed or partial payment (see Bertrand et al. 1992:139). Under such circumstances the producers are not able to pay the truckers immediately (in the event that they rent the truck on credit), truckers may not accept this.

9There is a transporters union in Bamako called Syndicat National des Transporteurs Routiers Urbains et Inter-Urbains du Mali (SYNTRUI). Also, Bertrand et al. found that 16.7 percent of the transporters they interviewed claimed to be members of a transporters' union and 16.7 said they were members of a transporters' group. It is not clear if they were talking about different institutions when responding to these two questions.

10In some cities Sankare (1989:41) points out that women are the owners of over 90 percent of the ass and horse cartes for transporting wood.
In addition, the woodcutters would have to return to the city or to the vender or vendors to collect their payment, and, as some woodcutters complained, they cannot afford the trips, and the vendors take the wood on credit and then refuse to pay later--the producers have no recourse. The problem of credit even arises when the woodcutters have access to a vending point in the city. When they have a relative or friend from their village living in the city who is willing to take their wood and sell it, they still don't have the cash available upon arriving in the city to pay the truck for transport. Hence, woodcutters who do sell their own wood in the city prefer to find a buyer who can pay the entire cost up front. Hence, credit and a having a developed clientele present barriers for rural producers or for new merchants to enter this market. These barriers prevent rural producers from vertically integrating the market and obtaining the full benefits available from the commercialization of their forest products.

While credit is difficult to obtain for woodcutters, 16.2 percent of transport owners claimed to have bank accounts and to have access to bank credit, and another 8 percent claim to have access to non-bank credit (Bertrand et al. 1992:126).

E. Distribution in the Cities--Wholesalers, Semi-wholesalers and Retailers:
Women have a quasi-monopoly on woodfuel retail sales (Sankare 1989:42). However, men are more and more taking up various aspects of the woodfuel trade (Sankare 1989:42). In general, the wood and charcoal brought into the cities is distributed by its owner (transporter, merchant, or woodcutter), either at a single distribution or by circulating to clients. The in a survey by Bertrand et al. (1992:136) 57 percent wood vendors claimed to be supplied directly by transporters, 16 percent by salaried woodcutters, about 8 percent by merchants, and about 18 percent by other means. Charcoal vendors are similarly supplied. In a the same survey, Bertrand et al. 1992:139) found that firewood and charcoal vendors had a mix of purchasing strategies including: delayed payment, credit, upon delivery, and fragmented payments.

Charcoal retail outlets may be owned by one person, the vender may be hired or may be the owner, the owner or vender may engage in woodsplitting themselves or hire someone, and they may hire a guardian to watch the outlet at night.

F. Transport, Storage and Access to Credit
There is little credit available to woodcutters to enter into the more lucrative aspects of the woodfuel trade. Below I outline the types of credit woodcutters require and some possibilities for providing it.

1. Credit for Stock:
Village woodcutters in two villages along the road between Bamako and Ségou expressed the need for credit. These villagers wanted to store the charcoal they produce during the dry season so that they can sell it later during the rains when the price in the city is high. Those large merchants who are able to purchase and store charcoal for the rainy season collect enormous profits. The dry season price is 1800-1900 FCFA in Bamako while the rainy season price is from 2500 to 3300 FCFA per sack. In six months, the profit on such an investment is

11 Presumably working for the vendors, but this is not specified in the report.
on the order of 75 percent. With access to credit, villagers would be able to retain a greater portion of this woodfuel benefit.

2. Credit for Cartes:
Woodcutters in interviewed between Bamako and Ségaou also expressed a need for credit to purchase ass or horse drawn cartes in order to be able to transport their woodfuels to the roadside without having to rent a cart. In a forestry project in Burkina Faso, villagers were provided with a fund taken from a fixed portion of the fixed price of wood sold (RPTES 1994). They could borrow from this fund for whatever purposes they choose. Some woodcutters purchased wagons. They were able to use the wagons in woodfuel commerce and to pay back the loans in due time.

3. Credit for Transport:
With credit for renting a truck to transport wood to the cities, village woodcutters would be better able to vertically integrate the market in order to reap a greater portion of the commercial benefits flowing from their forests. This opportunity does not exist in the other RPTES countries where the woodfuel markets have been "professionalized." This market is still rather opened and the means to rent a truck (along with the means to communicate with owners in Bamako) is sufficient for entry into the transport of wood.

4. Credit for Urban Sale:
Similarly to credit for transport, credit would also be needed either to support a village in maintaining a vending point in the city, or advancing the wood to a vender (preferably from the same village). This is more risky, since woodcutters reported advancing wood and never being paid back. The risks of collecting debts on advanced wood are high. In any case, this avenue of commerce--making entry into the urban markets--should be explored by woodcutters and by villages interested in retaining a greater portion of the profit from their forests.

Some other options that may become more viable with the creation of rural woodfuel management organizations (SRGs--see discussion in policy analysis section) is for villages to maintain their own retail outlets in the cities. Here they would have to pay the quarterly municipal tax of 4500 FCFA, and be able to support a woodsplitter, guardian and vender.

5. Existing Credit Arrangements:
Woodcutters already do take credit from friends or from the local store owner for subsistence needs while cutting. Those who are salaried or work for a patron often take loans from their patrons (woodcutter interviews). One forestry researcher, speaking of experiences prior to the 1991 events, explained, "What I encountered quite frequently in Central Mali was foresters who essentially functioned as sources of credit for woodcutters, playing the role of credit merchants more than anything else" (personal communications). But, these loans are not sufficient to facilitate entry into the more lucrative aspects of the woodfuel trade.

A CARE-Mali project in the region of Koro helped re-establish the Ogokana, or traditional forest police. As part of their revitalization they set up a fund. This fund was fed by fines the Ogokana levied on those using the forest resource in what they deemed criminal manner, and through profits from commercial activities in which members of the committee
were engaged. The fund was used not only for forest activities, but also for a cereal bank, public health investments, digging of a pond, a tree nursery, etc. (CARE-Mali 1993:6). The principle of use was that it had to be spent in the interest of the entire village. What is interesting here is that the forest sector activities inspired an organization that could profit and make investments in the wider development of the village. Similarly, in Burkina Faso, a village fund was created as part of a forestry project to provide credit for other than forest maintenance. Villagers used these funds to provide animals for sacrifices, to build a school for the village, to maintain roads, and as a source of credit for individuals who used the funds to, among other things, purchase ass cartes to transport firewood from the forests to the roadsides. This fund was used for loans, with the expectation (not always met) that the fund would be paid back.

In the current legislation under consideration in Mali (RDM 1994g), the funds derived from forest exploitation taxes will be divided as follows between the state, the CTD from whose forests the wood is taken, and the SRG of those who cut the wood. The funds derived from the transport tax is divided between the state and the CTD.
III. Prices, Quantities, Incomes and Profits for Woodfuels Supplied to Bamako:

In this section I will lay out the existing data for the evaluation of incomes and profits for actors at each level of the markets supplying Bamako with woodfuels. Bamako is taken as an example since it is the largest city, it has the highest woodfuel consumption, and the data available for Bamako are the best. This section demonstrates that the data are insufficient for any analysis of the distribution of benefits within these markets.

There are plenty of studies in Mali that present spot prices at various levels of the market (see Bertrand et al. 1984; Cisse and Bertrand 1985; Hagen and Konandji 1986; RDM 1988; Sankare 1989; see also RPTES 1994m:22-23). At best, however, crude price structures can be derived from these studies. In Annex B, tables for the analysis of margins and profits are presented with the available data filled in. To conduct an analysis of the income at different levels of Mali's woodfuel markets requires more systematic data collection and analysis.

A. On Data Quality and Availability:

The prices and quantities of woodfuels bought and sold as well as the expenses incurred at each level of the woodfuel markets remain largely unknown. The existing studies of Mali's woodfuel markets (Bertrand et al. 1984; Cisse and Bertrand 1985; Hagen and Konandji 1986; RDM 1988; Sankare 1989; see also RPTES 1994m:22-23) present punctually collected data on the prices at the level of production, transport, wholesale and final sale of the product. These studies do not account for:

1. Seasonal price and quantity fluctuations:
   - Fluctuations have a significant effect on the average prices, and hence on incomes and profits,
   - Seasonality of the flux of woodfuels into the cities also has an effect on the total estimated annual consumption. For instance, Bertrand et al. (1992:33,36,66,68,70) take the December flux and extrapolate to the rest of the year.\(^2\) It is unclear whether December is a high flux or low flux period. According to the Bertrand et al. (1992:108) report it would seem that this might be a high flux period, hence giving an overestimation of total consumption and production.

2. Expenses incurred by actors at each level of the market:
   - Including: permits/taxes, payoffs to agents and officials, the cost of wagons to transport the product out of the forests to the roadsides, hatchets and other tools, the expenses for work parties organized by some producers, subsistence loans taken by some producers, the various costs of transport, wagons used for distribution in urban areas, guardians for the vending outlet, the rental of the vending outlet, the quarterly municipal tax on the vending outlet, etc.

3. The quantities handled by actors at each level of the market (alternatively the number of actors at each level\(^3\)), and

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\(^2\)Bertrand et al. (1989:36,70) acknowledge these problems.

\(^3\)While Bertrand et al. (1992:136) did conduct a census of vending points, they do not report the total number of vendors in the city or the amount of firewood or charcoal an average vendor sells.
4. the horizontal distribution of market shares.
Without these latter data (3 and 4) it is impossible to estimate the profits at each level of this market and their distribution. Further, it is impossible to evaluate, based on these data, the types of mechanisms and market structures used by actors at different levels of the market to maintain their profits. Without such an analysis, it is difficult to address the question of whether there is concentration within the market, how the benefits of the woodfuel trade can be devolved to rural producers and to the communities from which the resource is taken.

B. Vertical Distribution of Income within the Woodfuel Markets:
To estimate the profits at each level of the market there are some essential missing data. The study by Bertrand et al. (1992) establishes the price structure (for one period during the year). To get from this to profits within the market, there are two other essential, but missing, pieces of information.

1. The operating expenses at each level of the market; and
2. The average amount of wood or charcoal handled by each type of actor at each level of the market.

Together these figures make it possible to estimate the average net income at each level of the market. Without these data the vertical distribution of profits in the market cannot be calculated. With estimates of subsistence costs, the average net profits at each level of the market can then be estimated.

To obtain these types of information two types of relatively simple studies would be needed. First, the expenses at each level of the market would need to be determined through systematic interviews and observation of the material expenses that enter into woodfuel production and trade. Second, the number of stères or sacks of charcoal handled by actors at each level of the market could also be determined by surveys. Such surveys will give relatively good and clear results among the producers and vendors, but, for the transporters and intermediaries (where the horizontal distribution of income is relatively skewed) getting reliable responses to questionnaires or interviews is not easy. To estimate the amount of the product handled by transporters and intermediaries, a census of the number of operators working in each city would be needed. Once the number of operators is known, the average quantity handled is easily determined.

C. Horizontal Distribution of Income within the Woodfuel Markets:
There is currently no information on the horizontal distribution of income in Mali. There is therefore, no way to estimate the degree of concentration of control over the urban woodfuel trade.

Information on horizontal distribution of income would have to come from observations and surveys of trucks entering the cities and observation and interviews with intermediaries. To assure that observations and interviews are not too skewed, triangulation is necessary. There are four points from which one can learn the quantity of the product handled by given transporters or merchants:

1. Interviews with sellers by the side of the road as to whom they sell to and how frequently. i.e. how frequently do they sell to a given transporter or merchant. This information can then be extrapolated to estimate the degree of concentration.
2. Interviews with vendors as to whom they buy from. To be evaluated in the same manner as above.

3. Survey of the trucks entering the cities. Here the drivers can be stopped and the name of the owner can be obtained as well as the wood merchant to whom the owner had rented the truck or the name of the merchant or merchants who buy from this transporter.

4. Interviews with transporters and intermediaries. Transporters and intermediaries may not give accurate information on themselves, but they may give information on others. It is useful to conduct these surveys and interviews after having completed the other surveys. In this manner, one can query the intermediaries as to the reasons behind the distribution found by the surveys.

D. Other Indicators of Concentration:

The conduct, structure, performance school of market analysis (see Lele 1971; Harriss 1979, 1984; Timmer 1974; Farruk 1970) begins by examining the fluctuations in profit margins over time. In theory, profit margins of intermediaries in a competitive market should be constant. If the margins are found to vary with time (as opposed to the prices, which are expected to vary with supply and demand), then this indicates non-competitive structures or conduct within the market. From there the reasons for these fluctuations can be evaluated.

E. Mechanisms for Maintaining Concentration and Margins:

If non-competitive structures and conduct are indicated by the analysis of margins and profits, the mechanisms by which these non-competitive circumstances are maintained can be evaluated. It is through understanding these mechanisms that concentration of the benefits of the woodfuel trade--most likely among transporters and other intermediaries--can be countered, so that a greater portion of the benefits might accrue to rural producers and to the communities from which forest resources are extracted (for a more detailed discussion of these mechanisms, see Ribot 1995b).
IV. Review and Critique of Proposed Forestry Policies:

The management of firewood and charcoal production is shaped by the "Law Fixing the Conditions of Forest Resource Management" (RDM 1994b) and the "Law Setting up Wood Exploitation, Transport and Commerce" (RDM 1994g). Both are scheduled to go into effect in early 1995. These laws subject woodfuel and other forest exploitation to: 1) the development of a management plan in conjunction with the Forest Service (RDM 1994b:art.54), 2) the determination of a maximum exploitation quota, 3) the payment of an "exploitation tax," and 4) the procurement of an exploitation permit.

The new laws assign the responsibility for forest management to elected Decentralized Territorial Collectives (Collectivité Territoriale Décentralisée--CTD), including the Commune Rurale, the Circle, and the Region (these are discussed in greater detail in the Legal and Institutional section of this report). The smallest CTD, that which most closely represents rural populations, the Commune Rurale, regroups between 15 and 30 villages. The next level is that of the Circle regrouping approximately nine Rural Communes. Seven to eight Circles will be regrouped by each of Mali's eight Regions. Each CTD will have its own forested domain.

This section examines how access to and control over the benefits of forest exploitation are shaped by the new forestry policies.

A. Repartition of the Forested Domain--Who Officially Controls Access to Commercial Forest Resources:

1. Repartition of the Forested Domain

In the past access to commercial use of forests has officially been concentrated in the hands of the Forest Service, DNEF (Direction Nationale des Eaux et Forêts). According to previous forestry codes (GGAOF 1935, RDM 1968 and RDM 1986) the nation's forests were divided into the forested domain of the state (subdivided into classified and protected forests) and the forest domain of collectives or individuals. Both the forested domain of the state and that of collectives and individuals were managed in the same manner by the Forest Service with the only difference being that the domain of collectives and individuals was not subject to the payment of exploitation taxes for the commercialization of forest goods. Permits, however, were still required for commercial (and some usufruct) activities in the collective and individual domains in addition to the state domains. Usufruct rights were specified in these texts and all commercial uses of forests were subject to permitting and taxation by the Forest Service.

Article 24 of the new forestry code, *Loi No. 94/AN-RM, Fixant les Conditions de Gestion des Ressources Forestières*, divides the forested domain into:


15. This is also shaped by the law fixing the rate of taxation: *Loi No. 94/AN-RM, Fixant les Taux des Taxes Percues à l'Occasion de l'Exploitation et du Transport du Bois* (RDM 1994i).

16. The forested domain of collectives and individuals was limited to reforested areas and those sacred forests protected for social or religious reasons. Commercial uses of these forests by the collectives or individuals were still subject to the same rules of usufruct and exploitation as state forests. (RDM 1986.)
1. the forested domain of the state;
2. the forested domain of Decentralized Territorial Collectives ("collectivités territoriales
décentralisées"--CTD); and
3. the forested domain of individuals.

This article further divides the state domain into the classified and the protected domains. Classified forests are usually those forests under direct state management (such as parks and reserves) while the protected domain refers to all other forests in the national domain (all forests that have not been classified or subject to privatization in the name of collectives or individuals). All of these domains, and their subdivisions, existed in previous law. Below I will examine each domain and describe how control and management of these domains may change under the new forestry code.

The management of the forested domain of the state has remained very similar to that of previous forestry codes. But, while the classified domain of the state may not be changed, a large portion of the protected domain is intended to be ceded to CTDs (the administrative/representative units of the newly decentralized governance structures). That is, the forested domain of the CTDs will be carved from the protected domain of the state. Indeed, according to the intended process of repartition foreseen by members of the Decentralization Commission, there may not be any "protected forested domain of the state" remaining after repartition.

**Classified Domain of the State:**

As in past codes, Article 34 of the new forestry code reserves the power to classify and declassify forests for the "Council of Ministers." The definition or redefinition of this domain was left entirely in the hands of central decision makers. No consultation nor inclusion of rural populations is required. As far as can be seen from the documents, centralized control over this domain will not change.

The management of the classified domain of the state is the same as in past codes. Permits are required for all uses and this domain is under complete control of the DNEF. The new code adds in Article 38 the statement that "the implementation of management plans for classified forests of the state can be done with the surrounding populations, forestry enterprises, cooperative organizations in the framework of a management contract settled with the forestry administration" (RDM 1994b:7). It should be noted that this admission of the possibility of including bordering populations in the management of the classified domain does not constitute a change in policy, nor a decentralization of management. A decentralization of management would require the inclusion and not just state the possibility of such inclusion in forest management--a possibility that has always been present. Article 38 simply affirms the possibility while avoiding the obligation of consulting with local populations concerning the management of the classified domain of the state.

Translation Note: "La mise en œuvre des plans d'aménagement des forêts classées de l'Etat peut être faite avec les populations riveraines, les entreprises forestières, les organismes coopératifs dans le cadre d'un contrat de gestion conclu avec l'administration forestière" (emphasis added).

Of course, even consultation does not constitute inclusion in decision making.
The classified domain of the state is poorly viewed by rural populations (Cisse and Bertrand 1985:178). Participants in the National Conference after the 1991 revolution contested the disposition of Classified forests. The disposition of this domain was also discussed in the regional and national conferences on the forestry sector (RDM 1993a; RDM 1993e). These discussions should be reopened. Which forests should the Classified domain include and toward what ends it should managed? What is the function of the Classified domain? Should there be Classified forests whose purpose is commercial production? (These questions are discussed further in Ribot 1995a, 1995b).

Option:
Review and rewrite articles 34 and 38 of the new code, in light of the comments in text.
Establish a formal and required process for local input into the creation and management of Classified forests.
De-classify all production reserve forests.
Limit production in Classified forests to production required for maintenance purposes.
Give surrounding villages all commercial rights for maintenance-oriented production in Classified forests.

Protected Domain of the State:
It is not clear that this domain will exist after the decentralization process is completed. The creation of the "forested domain of CTDs," if done in the manner described by the members of the Decentralization Commission, will completely encompass and eliminate the "protected forest domain of the state" (Pers. Comm. August 1994; RDM 1994j--see discussion of processes under the section on the forested domain of the CTDs, below). In the new code and in its presentation documents (RDM 1994; RDM 1994b; RDM 1994d), however, the process by which the domain of the CTDs will be carved out of the domain of the State is not specified. It is not even clear whether this process will be left to "décrets d’application." In that the new forestry code contains a section on the management of the protected domain of the state, it appears that those who elaborated it think that this domain will exist.

This inconsistency between the intentions of the decentralization commission and the newly proposed law was recognized early on in the regional discussions of the elaboration of the new code. The question of whether the protected domain of the state should be eliminated given the creation of the domain of the CTDs was raised in the regional reports on the revision of the forestry texts of Sikasso and Gao, RDM 1993:3. It is unclear why it was not addressed in these texts.

If the state does intend to give CTDs the protected domain, the forestry code could be significantly simplified by eliminating section 2 of chapter 2 of title 3 of the new code (Articles 46 through 50). If it is not intended for the CTDs, then some clarification is still needed of what parts of the domain the state intends to maintain under its direct control. In short, some discussions is needed as to the consistency of the legal position of the code and the laws of decentralization (the intended elaboration of RDM 1994j in particular--see discussion below).
Option:

Eliminate the protected domain of the state. Divide this domain among the smallest CTDs (the Rural Communes).

**Forested Domain of the CTDs:**

It is in the creation of this domain that the greatest apparent changes toward decentralization have been made. There will be three levels of CTDs. These include: the Commune Rurale (level of the arrondissement); the Circle; and the Regions. The physical limits of their domains will be determined in a process to be spelled out in a law now being elaborated by the Decentralization Mission (RDM 1994j). According to the Forestry specialist of the Decentralization Mission, the domains of the CTDs will be defined in a stepwise process. The first step will be the mapping, through a process of negotiations and discussions, of the traditional territories of local communities. These territories will define the domain of the smallest CTD, the commune rurale (level of the arrondissement). Remaining territory not claimed or disputed by the rural communtes will then go to the next level of CTD, the Circle. Those lands not claimed or disputed among the Circles will automatically fall into the domain of the Regions.

This process is to be elaborated in "Law of the principles of constitution and management of the domain of CTDs" (RDM 1994j). However, in the draft of this law there is no mention of the process described above. Indeed, on the contrary there is a process that functions from the top down specified in articles 1 through 6 of this draft law. This process is the process by which "good(s)" of National, Regional, Circle and Rural Communes will be defined.

The nature of the property over which CTDs have control will be defined along two dimensions: 1) the boundaries of the space over which they have jurisdiction; and 2) the power of decisions over the goods within those boundaries. The repartition of decision making power, in turn, will be determined by: 1) the definition of national good, and 2) the repartition of competence (i.e. what decisions will be defined as technical decisions for foresters and what decisions will be left for individuals and representative bodies). In this section I will focus on the fixing of boundaries, returning later to the question of the repartition of competence.

The question of what is a national good may be critical in defining the domains of the CTDs. National good is defined in the new law (RDM 1994j). This law systematically structures the definition of national good in an explicitly top down manner. leaving as a residual, for example, the resources and goods over which the Rural Communes will have control (see RDM 1994j:Arts.1-6,p.2). The process for defining the national good is defined in the draft law as follows:

"Article 1: A good embodies the characteristics of national interest, when in a general manner, it embodies a characteristic of public utility for the ensemble of the nation.

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19Translation Note: See bibliography.

20National good will play a role in limits of the definition of property. It will also play a role in shaping the uses to which property can be put. I.e. one may own a forest, but the state may retain the right to prevent it from being cut for ecological reasons, or indeed to cut it if the nation needs foreign exchange.
Article 2: A good embodies the characteristics of \textit{regional} interest, when its utilization interests several \textit{cercles} at a time and \textit{has no characteristics of national interest} at least until it is decided otherwise.

Article 3: A good embodies the characteristics of \textit{circles'}} interest, when its utilization interests several \textit{communes} at a time and \textit{has no characteristics of national or regional interest} at least until it is decided otherwise" (RDM 1994j:2, emphasis added).

Article four continues this trend defining the commune's interest as those goods with no interest to the nation, region or the circle. The domain of interest of the commune, that is the domain of goods over which the commune will have control is left as a residual after the interests of the progressively more centralized bodies are met. (RDM 1994j:2.)

This process is not one of decentralization unless the definition of what is a national good and of what is in the national interest is itself determined in a manner that represents the interests of rural populations.

The central question is whether the process described by the members of the Decentralization Mission, or the process of defining national good(s), described in the draft law, is the process to be followed for the repartition of the forest domain. They are by no means equivalent. They will result in very different degrees of local control of the forest resource.

Hence, while the new code has created territories that will be under the control of CTDs, it remains entirely unclear who will have a hand in defining the boundaries of these territories. In addition, it is unclear how much control of the resources within their boundaries these collectives will have. If firewood or forests, for example are determined to be a good of national interest, or if firewood harvest decisions are deemed to be a technical matter, then there is a risk that they will remain effectively under the control of national-level decision makers.

**Protection and Classification of the Forested Domain within CTDs:**

The new code allows CTDs to classify (e.g. protect) any forested areas or species that they see fit (Articles 18 and 53). These two articles are the most important change in the new forestry code. These clauses give the CTDs the ability to exclude all or part of the forests in their domains from commercial cutting. This essentially gives the CTDs the ultimate decision making power over the commercial disposition of their forested domain. This is an extremely radical (compared to previous policy) and positive change.22

22Translation Note: "Article 1: Un bien présente le caractère d'intérêt national, lorsque d'une façon générale, il présente un caractère d'utilité publique pour l'ensemble de la nation. Article 2: Un bien présente le caractère d'intérêt régional, lorsque son utilisation intéresse plusieurs cercles à la fois et n'a aucun caractère d'intérêt national à moins qu'il n'en soit décidé autrement. Article 3: Un bien présente le caractère d'intérêt de cercle, lorsque son utilisation intéresse plusieurs communes à la fois, et n'a aucun caractère d'intérêt national ou régional à moins qu'il n'en soit décidé autrement."

22There is a catch here. If the CTDs do not represent the local populations, then the ability to protect forests is not in the local population's hands. See section on Electoral Code.
In sum, the new repartition of space has the potential to devolve enormous control over forest resources to CTDs. Whether this will actually occur depends on the process by which the forested domain is divided up.

Option:

Make explicit and then present for public discussion the process by which the subdivision of the forested domain of the CTDs will be affected.

If local control is to be established, make this a process of repartition among the smallest CTDs, not including other levels of CTD.

Private Forested Domain:

The new code carries forward from earlier codes a private forested domain. Previously private ownership was only possible for planted forests and sacred forests or socio-religious forest areas (REM 1986:8-9, art. 51). The new code, however, adds an important dimension to this domain. The private domain now admits the possibility of private ownership of natural forests. While forestry officials and agents insisted in interviews that the ownership of forests has always been possible and has always been marginal, this new law creates the possibility of concentration of ownership leading to exclusion of local populations— even in the event where it is the CTD that sells these forest properties. Previous laws reserved privatization of forests for areas with symbolic value (to be privatized by communities) and for areas improved by tree planting. Privatization of planted forests involve a real investment in the improvement of the forest. The new code admits privatization of natural forests, which require no investment by those purchasing these forests. Under these circumstances there is a risk that natural forests will be sold off and purchased at low prices to those who see speculative interest in their ownership or who see immediate commercial value in the resource— which as private owners they will then be able to exploit without paying taxes (RDM 1994g:art.22). In short, while the cost of privatizing forest land was previously at least the cost of improving that land, the current laws provide an incentive equal to the tax break for privatizing.

The question of who will be able to sell these lands is left entirely opened. Article 60 simply states: "the forested domain of individuals includes: artificial or natural forests transferred to their name" (RDM 1994b:art.60). It does not specify who has the right to make this transfer. I presume that the transfer will be in the hands of the administrative body on whom the forest depends (i.e. the DNEF for Classified forests, the CTDs for the forest domain of CTDs). Even if it is the CTDs, it is unclear whether CTDs will be constituted in a manner that represents the local populations (more on this later in the discussion of the electoral codes). In any event, this is a profound change in who controls the resource, and it is still unclear who will control the process of privatization of natural forests.

Option:

Remove from consideration the privatization of natural forests. They are already available for lease. Remove from article 60 the words "ou naturelles."

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21 Translation Note: "Le domaine forestier des particuliers comprend: les forêts artificielles ou naturelles transférées en leur nom."
2. Implications of Repartition for Local Control:

It is entirely unclear how much control local communities will have over the repartition of the forested domain. This matter, as far as can be seen from the texts, has been left to a centralized decision making process.

In principle, however, the repartition among CTDs should not be an issue. If one of the objectives of repartitioning the forested domain is to establish local control of the forest resource, then the only CTD that can be considered local is the smallest, the Rural Commune. If forests are divided among the State, Regions and Circles, as well as Rural Communes, then Rural Communes will be competing for markets with entities that don’t have to internalize the costs of production as do local groups (see discussion of competition problem, Ribot 1995a).

Within the domains that the CTDs will be allocated, the new code does give CTDs many specific powers of decision over the disposition of the resource. Most importantly, it gives the CTDs the power to say no to commercial activities in their domains (Articles 18 and 53). If, however, the CTDs say yes to commercial activities, then a second layer of regulations apply. These regulations include the elaboration of a management plan. Responsibility for the elaboration of this management plan will be divided between the CTDs and the Ministry responsible for forests. This division will be cut along the lines of the "division of competence." Those decisions which the Forest Service judges "technical" will remain within the DNEF’s competence. Other decisions will be made by the CTDs and other Rural Management Structures (Structures Rurales de Gestion, SRG). The next section examines how the forestry codes structure control over resource management and commercialization.

B. Management of Commercial Forest Production:

1. Forest Domains of the State and Private Forest Domains:

The new forestry code includes sections on the management of each of the forest domains discussed above. In the classified and protected forest domains of the state, access to commercial woodfuel production is entirely in the hands of the Forest Service. The Minister responsible for forests will draw up a management plan. As mentioned above, this Minister can choose whether to include neighboring populations in the elaboration of this plan (RDM 1994b:art.38). Permission to produce commercially in these domains is entirely in the hands of the Forest Service, either through the sale of plots or the delivery of cutting permits. In short, this domain is under state control.

The owners of private forests are required to obtain a permit from the state for cutting in their area, however, they do not have to pay any taxes on the exploitation of wood or other forest products from their domain. Regulation of exploitation in these domains has not effectively changed from previous forestry codes. Below, I will focus on management of the forested domain of the CTDs, since it is this domain from which most woodfuels are expected to come, and it is to this domain that the Forest Service is devolving considerable control for forest exploitation.

2. Forested Domain of the CTDs:

The management of firewood and charcoal production in the CTDs is shaped by the new forestry code (RDM 1994b) and the "Law Setting up Wood Exploitation, Transport and Commerce" (RDM 1994g). These laws subject woodfuel and other forest exploitation to: 1) the
development of a management plan in conjunction with the Forest Service (art. 54), 2) the
determination of an exploitation quota, 3) the payment of an "exploitation tax," and 4) the
obtention of a permit. Below I will examine how access to and control over the benefits of
forest exploitation are shaped by these new policies.

**Management Plans**

Any individual or group of individuals wishing to commercially exploit woodfuels within
the forest domain of a CTD must organize into Rural Woodfuel Management Structures
(*Structure Rurale de Gestion de Bois*--SRG). This structure can be an Economic Interest Group
(GIE), a cooperative, or any other form of organization recognized by the state as having a
"moral personality." Before this group can begin exploitation, there must be a management plan
proposed by the Forest Service ("service compétent"), for approval by the CTD (RDM
1994b:art.54). This process guarantees that production will not take place within the forested
domain of a CTD without the approval of that CTD.

However, there are no guarantees that those who do want to produce and where there is
approval by the CTD will be able to obtain a management plan in a timely and free manner.
There is also no guarantee that local populations will be able to shape these management plans.
The Forest Service appears to have reserved for itself all decisions over the elaboration of this
plan (see RDM 1994b:art.54). The role and rights of local populations, other than their
approval of the plan after it is drawn up, is entirely unclear in these documents. In short, the
current configuration of planning regulations does not appear to admit local competence in the
matter of planning.

From the forestry code it is entirely unclear how complex such a plan must be, whether
the Forest Service will have the means to draw up such plans, how responsive the Forest Service
must be to those requesting plans, or whether rural populations will be able to propose their own
management plans. To prevent foresters from being able to use their power to allocate forestry
plans (on which the production quota, discussed below, depends), some checks and balances
would be helpful. If the Forest Service has the power to allocate these plans at its leisure and
to elaborate them at its discretion, there is room for abuses by field agents.

In addition, the proposed law regulating wood exploitation, transport and commerce
(RDM 1994g), appears to contradict the proposed forestry code regarding the necessity to
present a management plan prior to forest exploitation. This new law creates three types of
exploitation zones: 1) controlled, which are part of delimited and managed forests, 2) oriented
when they are part of delimited but non-managed forests, and 3) uncontrolled when they are
neither delimited nor managed. It is unclear what is meant in this law by "managed." The
contradiction arises since the new forestry code requires a management plan for exploitation
while this new law describes exploitation zones that are un-managed. Clarification on this point
within the new code (RDM 1994b) or new law (RDM 1994g) would be of help.

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24If it is intended that, for example, the "Plan d'Approvisionnement des Villes en Bois-Energie" will constitute
a management plan, then the Forest Service has reserved for its own discretion the decision as to where woodfuel
production will be permitted and where it will not. The effects of this centralized control cannot be evaluated until
after the elaboration of such plans.
Options:

1. Replace requirement of management plans with:
   a. Minimum Environmental/Social Standards, with
   b. Agreements of Understanding.

The idea is to create environmental and social guidelines for woodcutting. These guidelines might include ways of negotiating how much forest much remain untouched to continue to serve other village needs (for gathered products and pasture), how to incorporate the needs of transhumant groups, what cutting techniques optimize regeneration, how to maintain windbreaks, the maximum slope on which cutting can take place, etc. They may also contain suggestions as to how to cut to maintain a constant annual yield rather than taking a one-time harvest every ten years, etc.

The agreement of understanding would be a document signed by the representatives of the community wishing to cut wood (the CTD and representatives of all villages in which cutting is to take place). This agreement would explain the standards and guidelines, and those wishing to cut wood could simply sign and agree to comply with those standards.

With this arrangement the role of the Forest Service would be 1) to explain the standards and guidelines perspective woodcutters, and 2) to monitor and assure that those standards were being met. In this manner, the rural populations would not be dependent on the Foresters for "Management Plans." Any group wishing to cut wood could do so by agreeing to meet the required environmental and social criteria. The CTDs and villages would be independent of the Forest Service. The Forest Service (or an enforcement branch thereof—to separate extension and policing), could, however, suspend production rights or levy fines in the event of non-compliance.

2. Management Plans could be reserved for those CTDs wishing to increase their production (see discussion of production ceilings to replace quotas, below). These Management Plans would be requested by the CTD or Village and would be elaborated in collaboration with the Forest Service. The Forest Service, CTD and Villages would all have to approve the plans before planned production could begin.

3. In the signing of Agreements of Understanding and in the Elaboration of Management Plans, the village-level representatives must in both case approve production in surrounding forests. This should not just be a decision of the CTD.

4. Translate standards and guidelines for production into all Malian languages.

Note that the integrated management of woodfuel production with other forest uses is very complex and cannot be reduced to a set of pre-fabricated rules. Hence, any guidelines or standards must be extremely simple and open to flexible interpretation. They must also require negotiated decision making among those with other-than-woodfuel interests in the resource base.

Quotas

Article 6 (RDM 1994g) creates an annual woodfuel production quota. This quota will, according to forestry officials, be determined as a function of the sustainable potential production of the forests of the CTD in question. Quotas, however, carry a great danger of creating rent-seeking opportunities. Hence, all precautions should be taken to avoid this outcome.
Quota Administration:

The new law on the exploitation, transport and organization of woodfuel commercialization creates an ad hoc commission at the level of the rural commune to determine the annual quota. The commission is composed of:

- 2 representatives of the rural management structure
- 1 representative of the CTD
- 1 representative of the Forest Service.

The mode by which the quotas are allocated are defined by order [arrêté] of the regional governor" (RDM 1994g:art.10).\textsuperscript{25}

This article creates a committee in which the elected official from the CTD is a minority. This committee should be composed of elected officials and counselled by those with direct economic interest in production and those with technical competence. The "...modalités d’attribution du quota..." is left to the order of the Governor of the region. In this manner, this article has placed decisions in the hands of a non-representative body and maintained the control over the disposition of the resource at a level far from the communities to whom the resource "belongs" (according to the new repartition of the domain).

Article 11 creates a regional commission to resolve conflicts over the fixing and distribution of quotas. The composition and modus operandi of this commission is left to order of the Minister responsible for forests. Here DNEF has maintained control over a highly charged and politically sensitive process. One that perhaps should be arbitrated by the courts. This commission should have some surveillance other than the Minister responsible for forests.

The issue that arises here is whether one should give control over the allocation of valuable resources to elected officials who may use them for political purposes (allocation to their constituents--see Bates 1981), or should control be in the hands of a technical administration that may use these powers for economic rent seeking or political purposes (Krueger 1978; Bhagwati 1982). Or should some hybrid decision making institution be set up.

Options:

1. Change the title "Quota" to "Production Ceiling."

What has been described above is not a quota, but rather a production ceiling. This Production Ceiling should not be calculated on any non-local variables. The Forest Service should not be involved in setting the total National quantity of production. All production areas should be permitted to cut up to the ecological and social potential of the resource base.

Calculate the production ceiling based on 1) the ecological potential of the resource, 2) the area necessary to maintain the multitude of other forest uses of villagers and pastoralists.

2. Production ceilings should be determined for CTDs and Villages who request to sign Agreements of Understanding (or higher output Management Plans--see below).

\textsuperscript{25}Translation Note: "-deux représentants de la structure rurale de gestion concernee; -un représentant de la collectivité territoriale décentralisée dont relève la structure rurale de gestion; - un représentant du service forestier. Les modalités d’attribution du quota annuel d’exploitation sont définies par arrêté du Gouverneur de Région."
3. Basis for Production Ceilings should be Well Specified:
   a. Add to Article 6 a statement that makes clear that the production ceilings (called quotas in current Article 6) cannot be limited by any factor other than the regeneration capacity of wood in the area in question, other ecological criteria that make woodfuel cutting hazardous to the larger public good, or other local forest uses. Otherwise, there is a risk that the production ceiling will be used as a way of restricting and allocating access to production and marketing of woodfuels. This type of allocation, and associated rent seeking, is exactly what has developed with Senegal’s annual firewood and charcoal quotas (see Ribot 1990).

   The production ceiling should not be calculated on any national-scale variables. It should not be determined as a function of demand—even if the aggregate production ceilings requested annually far exceeds demand. National-level quota fixing or production ceilings based on demand should be explicitly forbidden in Article 6. If the aggregate of production ceilings exceeds demand this should be simply due to the fact that there is an oversupply of wood and labor to cut it. If there is an oversupply, reduction of the production ceilings should not be permitted to be used to address this situation. In short, all measures should be taken so that the production ceiling does not become a handle on the restriction of production, and hence rent collection on the woodfuel trade. All requests for production ceilings should be granted in all areas with ecological potential for woodfuel exploitation. The decision of where and when to exploit woodfuels should only be carried out in accordance with these ecological criteria and the local desire/decision to enter the woodfuel trade.

   b. Develop simple guidelines for calculating production ceilings. I.e. explicitly outline the ecological and social criteria (or processes) on which production ceilings will be determined.

4. To reduce the opportunity for Forest Service agents and officials or Production Ceiling committees to allocate production ceilings for political, economic and social purposes: place a time limit on the period a CTD or SRG must wait for a production ceiling. Require that after the signing of an Agreement of Understanding, the committee charged with determining the production ceiling deliver their estimate within 30 days.

5. Make the representative of the CTD, being an elected official, the president of the ad hoc production ceiling fixing commission. Give this representative veto powers, which in turn can be overridden by a general vote by the Commune Rurale. This change would make the committee more of a council to the representative body than an independent decision making body in itself.

6. Translate guidelines for production ceiling determination into all Malian languages.

7. Change from Three production zones to Two. Those zones should be 1) Agreement of Understanding Zones, and 2) Management Plan Zones.

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26Senegal’s forestry code has a clause to check the power of those whose approval of a management plan is required. It is stated in Senegal’s forestry code that the plan is considered approved if a response is not made within 30 days (RDS 1994:Article D15).
This change would eliminate the contradiction in the current code between requiring management plans and then having zones in which management planning is not required. It would also be consistent with the two forms of exploitation described in these recommendations. Further, in this manner, all production would be locally controlled. Since this two zone system does not require the production of elaborate management plans for local control to begin, there is no need to maintain uncontrolled zones.

In sum, 1) Change "quotas" to "production ceilings"; 2) give production ceilings to those communities signing Agreements of Understanding; 3) write up and publish guidelines by which the woodfuel production ceilings are determined; 4) make 30 day limit on the assigning of production ceilings; 5) Restructure representation on production ceiling determination committees--make the production ceiling commissions representative, and reconsider the commission to resolve problems over production ceiling establishment, perhaps moving it into the courts--e.g. create accessible recourse channels; 6) translate these guidelines into all Malian languages; 7) change from three to two production zones based on Agreement of Understanding and Management Planning.

On Permits and Taxation
-Cutting Permits

To cut wood and/or carbonize in Mali, a cutting permit has been required since the Gouvernement Generale de l'Afrique Occidentale Francaise (GGAOF) instituted its first forestry codes in 1901 up to the new forestry code now under consideration (see GGAOF 1901; GGAOF 1935; RDM 1986:art.42; RDM 1994b:arts.8,29,39,40,48.; RDM 1994e; RDM 1994f; RDM 1994g:art.14; RDM 1994i). This cutting permit (permis de coupe--RDM 1994b) is delivered upon the payment of the forestry tax (taxe d'exploitation--RDM 1994g) after which the holder of the permit is allowed to cut and/or carbonize wood for commercial ends. Hence, to the present day, access to forests is first controlled by the delivery of a permit to those who can pay the forest tax. Because most peasants cannot afford to pay this tax until after they have cut and sold their wood, most peasants cut without a permit and obtain a permit only at the moment of sale. This situation has created opportunities for forest agents to make special arrangements with woodcutters. In the villages I visited, for example, the forester was allowing the woodcutters to cut without permits. In the past, foresters are widely said to have fined or extorted payments from woodcutters who cut without permits. Also in the past, woodcutters often cut with DNEF permits against the will of local residents. Some sources said that since the revolution foresters neither issue cutting permits nor collect payments for permits because villagers refuse to pay.

According to members of the committee that elaborated the new code, there was a discussion of when the tax on exploitation should be collected--before or after the cut. The foresters argued for before the cut. Some members of the commission argued for after the cut. There was to be a commission set up to discuss this issue. The commission never was established and the final disposition was that the fee is paid in advance.
Options:

1. The payment of the taxes should be at the time of transport, that is, the
time of deliverance of the transport coupon, and not at the furnishing of a cutting
permit—-as was the legal specification in the past.

2. In the domain of the CTDs the permit to cut should be eliminated. Instead,
membership in a Rural Management Structure should be accompanied by an identity card
specifying the name of the holder and of the CTD and SRG to which s/he belongs. This
card would play the role of a cutting permit. It identifies who has the right to cut in a
given domain. The cards should be delivered by the CTD.

   In this manner taxes will not have to be paid in advance. Under this system any
wood cut in excess of the production ceiling will simply not be privileged to a transport
coupon/permit--i.e. the SRG will not be able to sell it. This should help to discourage
overcutting. The SRG will have to coordinate among its own members the allocation of
cutting rights. Some independent monitoring of cutting and transfers across CTD
boundaries should also be considered.

Transport Coupons:

   Up to the present, without having paid the exploitation tax a truck is not permitted to
circulate. With payment of this tax a circulation permit is delivered (RDM 1986:art.47). The
new codes create an exploitation tax and a transport tax. Once these taxes are paid the
transporter is furnished with a transport coupon (coupon de transport) (RDM 1994g:arts.26-30).
These transport coupons are checked along the rout and at the entry to cities. They are designed
to assure the collection of taxes on the woodfuel trade.

3. Tax Structures:
   Level of Taxation

   The tax on woodfuels was last fixed in 1986 at 200 FCFA per stère for wood and at 250
FCFA per quintal for charcoal (RDM 1986b:2). As in Niger, Mali will create three types of
production zones, described above in the section on Management Plans. These three zones will
be taxed differentially to encourage production in the managed zones (RDM 1994g; RDM
1994i). These taxes are organized by the "Loi No. 94 /AN-RM Fixant les Taux des Taxes
creates a special tax on transport of woodfuel to further encourage production in managed zones.
This repartition of the forested domain into zones is designed to encourage CTDs and SRGs to
manage their forests. These tax structures are presented in the four Tables below.
The Exploitation Tax:

<table>
<thead>
<tr>
<th>Type of Zone</th>
<th>Exploitation Tax on Firewood (FCFA/Stère)</th>
<th>Exploitation Tax on Charcoal (FCFA/Quintal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôlée</td>
<td>200</td>
<td>300</td>
</tr>
<tr>
<td>Orientée</td>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Incontrôlée</td>
<td>500</td>
<td>600</td>
</tr>
</tbody>
</table>

Source: RDM 1994g; RDM 1994i.

The Transport Tax:

<table>
<thead>
<tr>
<th>Type of Zone</th>
<th>Transport Tax on Firewood (FCFA/Stère)</th>
<th>Transport Tax on Charcoal (FCFA/Quintal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôlée</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>Orientée</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>Incontrôlée</td>
<td>200</td>
<td>250</td>
</tr>
</tbody>
</table>

Source: RDM 1994g; RDM 1994i.

Combined total tax on woodfuel exploitation and transport:

<table>
<thead>
<tr>
<th>Type of Zone</th>
<th>Combined Tax on Firewood (FCFA/Stère)</th>
<th>Combined Tax on Charcoal (FCFA/Quintal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôlée</td>
<td>250</td>
<td>375</td>
</tr>
<tr>
<td>Orientée</td>
<td>400</td>
<td>525</td>
</tr>
<tr>
<td>Incontrôlée</td>
<td>700</td>
<td>850</td>
</tr>
</tbody>
</table>

Source: RDM 1994g; RDM 1994i.

An evaluation of the relative tax on firewood and charcoal, however, reveals that these taxes favor charcoal production. We can see how this tax encourages charcoal relative to firewood by expressing the charcoal tax in stères of wood equivalent.
Exploitation Taxes in Stère Equivalents:

<table>
<thead>
<tr>
<th>Type of Zone</th>
<th>Exploitation Tax on Firewood (FCFA/Stère)</th>
<th>Exploitation Tax on Charcoal (FCFA/Stère equivalents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôlée</td>
<td>200</td>
<td>110-165</td>
</tr>
<tr>
<td>Orientée</td>
<td>300</td>
<td>150-220</td>
</tr>
<tr>
<td>Incontrôlée</td>
<td>500</td>
<td>225-330</td>
</tr>
</tbody>
</table>

SOURCE: RDM 1994g; RDM 1994i.

Notes:
*The yield by weight of charcoal from wood is between 15 and 22 percent (Bertrand et al. 1992:70). The rough weight of a Stère of wood is approximately 250kg (ESMAP 1991bf). Hence, a quintal of charcoal is equivalent to between 1.8 to 2.7 Stères of wood.

Combined Exploitation and Transport Taxes in Stère Equivalents:

<table>
<thead>
<tr>
<th>Type of Zone</th>
<th>Combined Tax on Firewood (FCFA/Stère)</th>
<th>Combined Tax on Charcoal (FCFA/Stère-equivalents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôlée</td>
<td>250</td>
<td>140-210</td>
</tr>
<tr>
<td>Orientée</td>
<td>400</td>
<td>200-290</td>
</tr>
<tr>
<td>Incontrôlée</td>
<td>700</td>
<td>320-470</td>
</tr>
</tbody>
</table>

SOURCE: RDM 1994g; RDM 1994i.

Notes:
*The yield by weight of charcoal from wood is between 15 and 22 percent (Bertrand et al. 1992:70). The rough weight of a Stère of wood is approximately 250kg (ESMAP 1991bf). Hence, a quintal of charcoal is equivalent to between 1.8 to 2.7 Stères of wood.

The above tables indicate that the exploitation or stumpage fee for charcoal is significantly lower than the stumpage fee for wood. The tax on charcoal is even less, in terms of the percentage of the retail price, than that on firewood. This differential taxing provides an incentive toward charcoal use. This incentive is accentuated by the fact that cooking with charcoal is approximately twice as efficient as cooking with wood.\(^2\)

Charcoal production and use should be discouraged rather than encouraged, particularly if one accepts the thesis that there is a wood shortage or that woodcutting has negative ecological effects. Charcoal is generally used by wealthier families. Hence, taxing it less than firewood represents a regressive tax.

\(^2\)Production is inefficient but some of the inefficiency is made up in the higher efficiency of cooking with charcoal.
The exploitation tax should at least cover the cost of the reproduction of the wood—it should represent or cover the stumpage fee. It should also compensate the community for the opportunity costs of the forests cut. It is not clear from the existing documents how the proposed taxes were calculated or whether they can cover these costs.

Options:
1. Revise taxes so that the tax on the wood cut for charcoal is equivalent to, or higher than, that charged on wood. This type of taxing might help discourage the current trend toward charcoal and away from firewood.
2. Estimate the reproduction and opportunity costs and integrate them into the tax base.
   
   The current tax structure is regressive and encourages wastage of the resource. It should be re-figured. (See recommendation under research proposals.)
3. Change the zones to 1) Agreement of Understanding areas, and 2) Management Planning areas to be consistent with earlier recommendations.
4. Combine the exploitation tax and the transport tax for the following reasons:
   a. Administering—collecting, accounting for, controlling, and distributing the receipts—one tax is easier than administering two.
   b. A tax on woodfuel transport may distort woodfuel transport by singling out woodfuel transport from the transport of other products. It may make transporting woodfuels less attractive to transporters.
   c. There is no economic theoretical reason that both taxes cannot be collected at once and given the same name—e.g. 'exploitation tax'.

Repartition of Tax Revenues

The Forest Service proposed a repartition of tax revenues in a new law. Legally, repartition of tax revenues is not considered appropriate for a law and will be proposed later as a decree. The figures shown below were not proposed as law, but are likely to be forwarded as a decree. In any event, they show the intention to repartition the taxes among the SRGs, the Rural Communes and the State.

Repartition of Exploitation Tax Revenues:

<table>
<thead>
<tr>
<th></th>
<th>Incontrôlée</th>
<th>Orientée</th>
<th>Contrôlée</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRG</td>
<td>-</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Rural Commune</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>State</td>
<td>50%</td>
<td>20%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source: RDM 1994h.
Repartition of Transportation Tax Revenues:

<table>
<thead>
<tr>
<th></th>
<th>Incontrôlée</th>
<th>Orientée</th>
<th>Contrôlée</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Commune</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
</tr>
<tr>
<td>State</td>
<td>50%</td>
<td>40%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: RDM 1994h.

Options:

1. Change the zones to 1) Agreement of Understanding areas, and 2) Management Planning areas to be consistent with earlier recommendations.

   This change will have the added benefit of reducing the complexity of this taxation system.

Tax Collection

Less than a quarter of the woodfuels entering Mali's cities are subject to the required taxes. While over 2,000,000 steres of wood are consumed annually, only about 500,000 steres are controlled (Personal Comm. Forestry Officials, August 1994). There are numerous methods for escaping such control:

1. Trucks enter the city at night to escape control (Magassa 1989:32).
2. Trucks enter on weekends to escape control (field interviews).
3. The amount of wood or charcoal loaded into a truck exceeds the quantity registered on the permit (field interviews).
4. Secondary and tertiary routes are used to enter the cities avoiding control posts.
5. Agents accept bribes to allow overloaded trucks to pass by.

Forestry Sector Policy implementation and tax collection has been a problem in other parts of West Africa and throughout West African history (see Ribot 1995a).

Option:

Have CTD from which wood is taken collect taxes. Because the CTDs will get much of this tax, they have the motive to monitor wood cutting and to collect the taxes. (Cf Burkina Faso and Niger where this method has worked well, see Ribot 1995a.)

Direct tax collection by the CTDs will also eliminate the problem of returning the revenues to the CTD once collected by the State.

C. Forestry Sector Policy Implementation and Enforcement

Some benefits from the forestry sector flow to the state and to state agents. In this section I will briefly examine how the state and state agents have used forestry policies for financial purposes and how current policies create opportunities for extractive uses.

1. Forest Police and Past Abuses:

   In the past, the power of forest agents to fine and confiscate in Mali were used as ways for the state and for state agents to gain access to the benefits of the woodfuel trade. Below I will identify policies that create opportunities for these types of abuses to encourage further
I discussion of their disposition. One high official in the Forest Service recounted the following story to me:

Oppressive legislation during the eighties, such as high fines on cutting branches and on forest fires [see RDM 1986], was instituted because the president wanted to appear to be a staunch environmentalist to appeal to foreign aid for project funding.\(^2\) To foster this image he made fines so high so as to be effectively prohibitive.\(^3\) A 1986 law made the fine 300,000 FCFA for anv brushfire. Although this was a fine beyond the means of most peasants, many of the members of the national assembly also voted for it since they saw two levels of interest in it. First, if they voted for it, they demonstrated their allegiance to the president—this is important for keeping one’s job in a one party state. Second, they knew that there would be difficulties with its implementation. These difficulties would eventually bring them benefits. Deputies of the national assembly could get credit for resolving problems with the foresters when the villagers would come all the way to them to complain about the abuses. The villagers would come to the deputies and the deputies would then resolve the problem. The deputies would get political credits in their region for helping their constituencies.

Foresters also had two levels of interest in these policies. First they had the 25 percent of the fine that was to be divided between the "indicator" and "verbalizer" agents (the agent that identifies the criminal and the agent who writes out the fine). There were then the arrangements—that is payoffs—between them and those accused, where agents could extract enormous sums of money by allowing someone to go free.\(^3\) In addition, the collection of these fines even became important for the funding of the state coffers. (Interview with high forestry official, August 1994.)

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\(^2\) Other researchers have pointed out that foreign donors proposed or at least supported these high fines.

\(^3\) The president at the time was quite involved in the "Environmental Movement." He would take trips to the circles. He would hold meetings in which he would grade the circles as to their environmental work, based on the history of reforestation, forest fires, and the implementation of improved cookstoves. He would grade them:

- Section Pilote avec Palme
- Section Pilote
- Section
- Section Sous Tutelle—i.e. needing discipline.

This gave E&F tremendous power in the rural areas.

\(^3\) One researcher working in Central Mali explained: "In the area that I worked, it was pretty rare that agents actually imposed these large fines. They tended to focus on getting much smaller amounts (say 1000 FCFA here, 1000 FCFA there). The exception was with herders from whom they would extract animals worth tens of thousands. Also even the large fines tended to be gathered from a number of individuals rather than from a single individual. When I went through the PVs [records] for fines in 3 of the cantonnements [districts] in Mopti for the years 1988 - 1991. I found that virtually all of the larger fines recorded were actually imposed on 5-10 individuals rather than one single person paying them."
There are also plenty of stories of abuses by forest agents including the setting of bush fires themselves and then fining all surrounding villages. This method of extraction was said to be practiced more often after good harvests. If there was a good harvest the forest agents would be out in force fining the rural populations (cf RDM 1994k:3). These practices help explain why after the 1991 revolution in the national conference rural populations called for the elimination of the Forest Service. For a long time after the revolution foresters did not dare return to rural areas. Rural populations throughout the country threatened to "burn foresters alive if they set foot in their village."31 Other abuses by foresters included the heavy fining of people who cut even the smallest of branches. Even at times interpreting the removal of leaves as the cutting of branches. They also often fined or extorted money from woodcutters for cutting without permits, and till today foresters and police still take "gifts" from transporters at forestry control points. Below is a review a few policies that leave room for abuses.

2. Proposed Policies that Create Rent-Seeking Opportunities:

Permits and Tax Collection:

As mentioned above, in the discussion of the new tax laws, the time at which the tax on woodcutting is collected is one important place where rent-seeking opportunities existed in the past and where they appear to be being recreated in the present code. To avoid the delivery of permits being abused by agents the simple solution is to collect taxes on forest exploitation at the outset of rural-urban transport. This allows peasants to cut with a freely delivered permit, or as a member of a SRG, without the threat of extortion if they cannot afford to pay the tax in advance.

There is a problem in enforcing tax collection on forest products due to circumvention of forestry posts and due to bribes or "gifts" given to forest agents monitoring the collection of taxes and the flow of woodfuels into the cities.

Now that the CTDs has a stake in the taxes and fees, they could be charged with tax collection (see Burkina Faso and Niger examples, Ribot 1995a). CTD representatives could also participate in control at the urban control points.

Option:

1. Have CTDs collect the tax.
2. Employ members of the CTDs or SRGs in tax collection and monitoring.

The "Repression of Infractions" Section of the Proposed Forestry Code:

Article 71 (RDM 1994b) specifies that all forest products confiscated or returned are to be sold at public auction. But, if indeed, the forests are to become the domain of the CTDs, then the confiscated products coming from them should also fall within their domain. The CTD should have the right to sell or dispose of the product as it sees fit.

Option:

Amend article 71 to specify that the confiscated products or the proceeds from their sale should be returned to the representative bodies of the CTD from

31One researcher explained foresters were killed, "necklaced," but that the official line is that there were just threats. Another said, "In 1991, I was told by a number of foresters that at least one forest agent was shot and killed in Kayes area. Also I know that one was very badly beaten by herdiers in the Bankass area in April 1991."
which the product originated. Such a change in this clause would reduce the incentives for State foresters to engage in confiscations for state or personal profit.

In the event that the infraction is due to the CTD itself--i.e. systematically exceeding its production ceiling--then the revenues should go to some other forest management fund.

Article 93 states that accomplices to forest crimes will be punished as other principles and condemned jointly to fines, expenses, damages and interest and restitution.

**Option:**

Reconsider article 93 equally implicating all criminal accomplices. In the past whole villages or even groups of villages in the area surrounding a forest fire were heavily fined when the perpetrator could not be identified (cf RDM 1994k). This practice was even used as a form of taxation. Some limits should be put on this practice, or limited criteria for defining accomplices should be specified. The practice of attributing collective guilt in the event that a community does not produce a perpetrator should be explicitly forbidden.

Article 96 specifies that forestry agents obtain a portion of fines, profits from the sale of confiscated products, damages and interest.

**Option:**

Reconsider article 96 giving forestry agents a portion of fines, etc. Financial incentives such as these had very perverse effects in Mali in the past and tend to have perverse effects on the patterns of application of laws. Those crimes with the highest fines or those that lead to the confiscation of the most valuable products tend to be pursued (RDM 1987a:29; interviews).

Study alternative incentive systems. This same system is also being put into practice in Senegal, Burkina Faso and Niger. A general study of the dynamics of this policy would be of great value for all of these countries.

3. **Preventing Abuses:**

Since the 1991 revolution, the behavior of field agents has not necessarily improved. In a recent report (Touré 1993:12) peasant are said to have expressed the following sentiments:

The behavior of state agents has only changed in appearance. These agents are, in effect, more accessible in that they easily receive us in their offices. The problem is that the agent isn’t really in his office. The problem is that what you come for is not resolved.

The corruption is worse because the state no longer has power. Each time it’s the case, the peasant depends on the good will of the agent and even if you can tell him what you want you are obligated to appeal to his good will to get satisfaction. The state has lost force, but to the profit of its own agents. There are currently no channels of recourse open to rural populations (Touré 1993:12).
Options:
1. Develop Accessible Recourse Channels.
2. Given the history of Mali’s Forest Service, one option would be the creation of a citizen’s surveillance committee funded by the taxes collected on forest products, that is constituted perhaps of representatives from each Circle appointed by Circle’s elected officials. This committee should be provided with the means to survey and to bring to court or recommend discipline for forest agents who interpret or apply forestry laws in an abusive manner. The committee would have the means to travel and the means to communicate with authorities competent to prosecute those who abuse or misinterpret forestry laws. In short, some easily accessible recourse channels must be created.

These recommendations are by no means designed to bring into question the reorientation of the Forest Service from a policing agency, as they were in the past, to an extension agency, as they intend to be in the future. These recommendations are just to insure that the incentives to reproduce the institutional dynamics of the past are removed wherever possible. If indeed, the intention is to change the institutional dynamics of the Forest Service, then these measures should not pose any problem or threat.

4. Accompanying Measures to Help Avoid Abuses:
Another way to insure that policies are implemented correctly and without abuses is to inform rural populations of their rights, and accompanying responsibilities, and of the channels of recourse open to them.

Options:
Support accompanying measures. The promotion of rural participation in the benefits of the woodfuel trade would be well served through supporting accompanying measures. These could include, among other measures:

A. Translation of the texts of the new forestry code into the written national languages, and phonetic translation into the non-written languages so as to enable the reading of these texts to all villages in Mali.
B. Diffusion of these texts to all villages in the forested sections of the countries.
C. Courses and instruction explaining to rural populations their new rights, powers, and recourse channels.
D. Diffusion of the same information over the radio.
V. Legal and Institutional Issues:

A. Who Controls The Forests? Deconstructing the Coexisting Mechanisms of Decentralization and Concentration

Forestry policy in Mali is embedded in a web of other policies, policy initiatives and political-economic processes that will shape local resource management and control. Who decides the disposition of forests and other resources is a function of the forestry code and this broader institutional environment. A thorough evaluation of this institutional environment is beyond the scope of this paper. Below, I sketch some institutional structures and laws--beyond the new forestry policies--that will have an important effect on forest resource control.

1. Legal Circumscription of Resource Control:

a. Organization of Government:

Mali’s Organic Code will determine the Structure of Central Government Administration. This will shape the Ministries and their organization and the appointed officials that will represent different central government agencies within the various regions, circles and rural communes of Mali. As such, the organic code shapes who will be present within the rural areas, and at what level of administration they will be present, to be making decisions over natural resources that will be reserved for central government discretion.

b. Decentralization and the Creation of Local Elected Governments:

The decentralization process is elaborating new structures of local representation and administration. These new governance structures are called Decentralized Territorial Collectives (CTD). The Decentralization Commission has defined the levels at which these administrations will operate and the constitution, as in number of representatives and their powers, of the representative bodies. The Rural Communes are the lowest level of elected government, corresponding to the level now defined by the arrondissement. These governing bodies will regroup fifteen to thirty villages. The next level is that of the Circle, regrouping several Rural Communes, and the next level will be the Region.

In determining the levels at which representation will occur, a major issue that arises is the question of the role of traditional social institutions, such as the village, and sub-village institutions such as village chiefs, village councils of elders, land chiefs, etc. In the current arrangements, these customary or traditional structures will have no legal standing. The lack of recognition of the village, which is the traditional unit of organization for most natural resource management activities, has a multitude of implications for natural resource management. It also has a multitude of implications for the legitimacy of the governance structures now being constructed by the decentralization process. The questions that emerge include: Will the non-recognition of traditional authority structures and traditional levels of social organization bring into question the legitimacy of the governance structures being established by the central government? Will the scale of managing resources at the level of the Rural Commune conflict with customary resource management authorities (at the village level, for example)? Will these conflicts undermine management at the Rural Commune level?

The question of whether customary authorities should be recognized is also a contentious issue. There is no particular reason for the central government to legitimize these hereditary and often inequitable existing authority structures. However, if they are not included in some manner, then there is a risk that the new governance structures will not be trusted or legitimate.
in local eyes. The fact that traditional authorities will not be recognized does not eliminate the powers these traditional authorities maintain.

Some non-governmental institutions in Mali have raised these issues and have lobbied for the official recognition of villages and of sub-village resource management institutions. While there exist ways in which these institutions can incorporate to obtain a "moral personality," that is to be recognized as having the legal rights of individuals, there are no channels by which they can obtain a "legal personality," or the power to impose the exercise of their practices and to enforce their rules and regulations (or even the rules and regulations of the government) within their traditional sphere of influence. Without a "legal personality," these institutions are legally powerless. In this manner, their authority is undermined, or at least not supported by the new governance structures. This is, in my esteem, appropriate. There is no reason that non-representative, non-elected or non-locally accountable bodies should have any such powers unless they are ordained with these powers by and under the supervision of locally accountable representatives within the laws that representative bodies have elaborated. Non-governmental sub-village structures may, more appropriately, have the ability to register as Economic Interest Groups or Cooperatives under the new laws.

One central question that remains un-answered is whether and how these traditional authorities and traditional institutions should be drawn on and systematically included in the management and use of the resources of the new Rural Communes. Should there be required consultations with representatives of these groups? Should the modus operandi of these groups be drawn on for the elaboration of official policies? Should these groups be delegated responsibilities and powers ordinarily retained in the domain of government? (See discussion on customary authorities, below.)

Another critical question is whether the village, which is the basic unit of natural resource management, should be a CTD, and whether it should be to this level that decision making powers over resource use and management are devolved. This brings up the question of whether the Rural Commune (the most local of the CTDs) can be considered local. What is certain is that the higher levels of CTD cannot be considered local for the purposes of resource management. If control is to be local, the only CTD that should have a forested domain and power to make decisions over its commercial disposition is this smallest unit--the Rural Commune (also see discussion of "The Competition Problem" in Ribot 1995a).

c. Repartition of Resources within the Territories of the New Governance Structures:

Control over the country's resources, such as minerals, animals, vegetation, monuments, cites of touristic value, etc. will also be divided among the National, Regional, Circle and Rural Commune governments. These divisions of control will cut across the territorial divisions over which the CTDs have jurisdiction. Hence, even if the CTDs govern a given territory, they will only have control over certain resources or a certain portion of the resources within their domain. The controls they retain will be determined in a process defined by the Law of Constitution and Management of the Domain of CTDs (RDM 1994j). This law allows the central government, with the approval of the national assembly, to affect the repartition of resource control among these domains. This top down process in which the "national goods" are divided up was described above (in the earlier discussion of Repartition of the Forested Domain). It is a process by which the resources controlled by progressively smaller units of
governance are the residual resources that the next larger units find of no interest. Hence, this is a process by which central powers can maintain considerable control over the disposition of the national natural resource base.

d. Repartition of the Forested Domain:

Similarly to the repartition of other goods, the national forest domain, which will be divided into the Classified domain of the State, the Protected domain of the State, the domains of the CTDs, and of Private Individuals, will shape who controls the forest resource. It is not clear from the texts what process will be used to determine this repartition. However, it would appear that this process will be the same top-down process defined for the repartition of other resources. This process too has great potential for retaining control over a large portion of the resource base in central hands. (See earlier discussion of the Repartition of the Forested Domain.)

e. Repartition of Competence and the Elaboration of Forestry Codes:

The ways in which centralized control of resources has been maintained within the forestry codes has been discussed at length in the policy analysis, above. Here I outline some more general issues that allow the forestry codes to serve the maintenance of concentration.

Who has the technical competence to make which decisions? This is one key question that is addressed in the elaboration of laws. When the forestry laws are elaborated, the laws lay out who can and who cannot make what decisions over the disposition of forest resources located in the domains of different governance structures. Some decisions are left to individuals, some are allocated to the newly elaborated CTDs and some are retained for the technical Forest Service, DNEF. The laws also determine what measures and fines can be taken to enforce this division of powers. It is here that much of the division of control over the disposition of forests is determined. Two key questions arise in determining this division of powers: 1) what is the national good?—which will determine the problematic being addressed by the laws, and 2) what is a technical decision?—which will determine what must be decided by the Forest Service.

The definition of the national good is itself a complex ideologically laden issue and so is the definition of the problem. For example, should commercialization of forest products to conserve foreign exchange or to supply cities with fuel be a matter of national good? Or, is the local control of forests for subsistence purposes or the clearing of forests for agriculture the more critical matter of national good? Is deforestation a problem? Or is the clearing of forest lands for much needed agricultural expansion a benefit? These are clearly questions that depend on who is asking. They are not simply technical questions. There are certainly technical aspects to them—such as food, fodder and medicinal species identification, watershed protection, wind erosion protection, etc. But, they are not questions that should be left entirely to the "technical" agencies that have a direct interest in and a specific ideological position on the disposition of forests. That is, the elaboration of forestry policy should not ultimately be in the hands of foresters. Rather, these decisions bring up political-economic and socio-cultural issues that should be technically informed and opened to public debate.

Who is technically competent? How is local knowledge of forest management weighed into the definition of the problem, into the measures that must be applied, and into the repartition of "competence." These too are questions that have not been debated in the
elaboration of the new forestry laws, which have not systematically evaluated local knowledge and its role in resource management.

Further, so little is actually known about the state and management of woodfuel resources that the only possible basis for elaborating policies is not technical, but rather social. Definition of the problem and decisions taken over how to solve it must be interpreted as reflecting ideology rather than knowledge. Hence, one should examine the policies being made, such as the maintaining of centralized control over the commercial aspects of woodfuel use, and ask whose interests do these decisions actually serve. Given these uncertainties, careful attentions should be paid in the defining of national good and in the repartition of competence, so as to err on the side of local autonomy. Since there has been no official local autonomy over commercial decisions in the past, this stance constitutes an experiment. It is an important experiment in which local initiatives may reveal new, efficient and productive ways of using the forest resource. Of course, definitions of efficient and productive also depend on who is asking--the villagers, the merchants, the State, the donors....

Arguments against local autonomy, such as "tragedy of the commons" (Hardin) or "the greatest good for the greatest number" (Bentham) (usually to be decided for the greatest number by a narrow elite), have often served to justify central control. The environmental movement has been a classic justification of such central decision making (see Peluso 1992). Given the experiences in Mali during the eighties, the current move toward local autonomy through decentralization is a positive step. It is important, however, to carefully examine the definition of national good and the repartition of competence to assure that they too are not just mechanisms for maintaining central control.

The laws that circumscribe the repartition of competence are all passed through representative bodies before they are implemented. They are reviewed by the National Assembly, which examines these laws to determine who has maintained which powers for what purposes. It is here, if the Deputies and their staffs have the technical competence to discern, that excessive maintenance of centralized control of resources with the Forest Service can be checked. But, even this check is circumvented since, the codes reserve for decree many critical regulations that influence the repartition of competence. They reserve the elaboration of certain decisions for discretion of the Forest Service (this is the regulatory path--voie reglementaire).

In short, there are numerous places for interpretation and mechanisms within the elaboration of forestry laws that permit the Forest Service to maintain control over certain aspects of resource decision making in its own hands. How much of this maintenance of control is justified is a matter for interpretation. Indeed, it is a matter that needs further analysis, discussion, and debate.

f. The Electoral Codes:

The Electoral Code is among the most critical links in determining whether the decentralization of resource management will actually occur. If the CTDs are beautifully crafted, and the national good is defined in a way that truly serves local interests, and if the repartition of competence favors local resource management and control, there will still be no local control if the CTDs are not representative of local populations. If the bodies to which decision making powers are being given in the decentralization process, the CTDs, do not represent local populations, then giving CTDs power to decide will not constitute local control--
even if the villages were themselves made into CTDs. Hence, the last link in assuring that control of natural resource management and its benefits are decentralized is in assuring that the Electoral Code guarantees that CTDs are constituted of locally accountable representation. The importance of the electoral code cannot be overestimated, hence, below I will outline the issue that the Electoral Code now presents.

Mali's electoral code does not admit independent candidates in local elections. At present, the representatives of the CTDs will be elected by universal suffrage. However, the candidates will be presented on lists chosen by political parties. The issue of independent candidates was discussed in the National Conference and is still a matter of contention. Peasants in the National Conference requested that independent candidates be admitted. Without independent candidates, there is a great risk that Mali will reproduce the same non-representative system that exists in Senegal. In Senegal, parties constitute lists, and peasants don't feel that their Rural Councils represent them (village interviews, Hesseling n.d.). The lists in question are selected by political parties with their seats in the capital. The candidates often do not even live within the region in question, but are urban dwellers who maintain a residence in the rural area they will "represent." Through this system, Senegal's Socialist Party has maintained control over the rural areas.

In short, election of rural representatives by list is a systematic way of allowing large parties to choose who will "represent" rural areas. The vote becomes a symbolic legitimation of this choice. The representatives and their decisions, however, are neither considered representative nor legitimate in the eyes of rural populations. If the CTDs are not made representative of local populations, then the entire decentralization process and the elaboration of the new codes become parts of the smoke and mirrors that make it appear (one must ask to whom) as if decisions are being made by local populations. If there is to be any serious decentralization of control and any serious devolution of the benefits of the woodfuel trade to rural populations, the Electoral Code must be revised. If it is not revised, then the discussions of decentralization and participation are moot. The achievements of the resulting deconcentration will give few benefits and no new local control to Mali's peasants.

2. Social and Political-economic Processes of Resource Control:

Decentralization and local control in the context of liberalized markets is no panacea. There remain a large number of other concentrating processes that will continue to extract resources from the rural regions. Traditional authorities based on heredity, relations of dependence, or relations of nobility and captivity will continue to make for unequal distribution at the level of the village. Competition will pit one rural area or village against the next, bringing down the price of forest products and other natural resources. Exploitation in all its

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32 In this case it will only constitute deconcentration of government. "Deconcentration is a form of decentralization involving a non-definitive transfer of decision-making and executive powers within an administrative or technical structure (e.g. the Ministry of the Interior to a governorship or from the national directorate of a service to the regional directorate)" (Thomson and Coulibaly 1994:iii). I.e. it is the moving of centrally controlled decisions closer to the concerned populations without giving that population decision making powers.

33 The conference convened to reconstitute the government after the 1991 revolution.
forms--corvée, sharecropping, unequal terms of exchange, rents in cash and kind, usury, etc.--will persist. These phenomena will still have to be fought on separate fronts. They occur as part of governance and they are from it.

In addition, there is a long history of non-implementation of the existing forestry laws. Laws are selectively applied as a function of the economic and social status of the individuals and groups to whom they are supposed to apply. Agents use their state sanctioned authority to extract rents from rural populations. Bribes or gifts are often used to avoid being fined or having to follow forestry regulations. In general, forestry laws are and have been at best only partially implemented. These trends will certainly continue to shape policy outcomes.

In short, while central control can be built into policy, there are also ongoing centralizing processes operating within society as a whole. These processes will be present regardless of the progressive nature of policy. To counter these processes policies and practices must be periodically reviewed, revised and re-implemented. Policy is an iterative process of vision and re-vision. But, to see the processes that shape this process the mechanisms of centralization must be understood.

3. Conclusions:

The above discussion illustrates that the devolution of control over forest resources to local communities requires: 1) representative bodies at a local level; 2) locally accountable representatives to whom to devolve decision making powers; 3) repartition of decisions and powers giving those local representatives control of the disposition of the resource; 4) repartition of the forested domain giving those representative bodies jurisdiction over the forests. Withholding any one of these elements of control from the rural populations undermines the devolution process. If there is to be decentralization of natural resource management, the focus cannot simply be on forestry codes. Forestry codes are just one critical part of the formula. The new codes do devolve more powers over the forests to local governance bodies. But are these bodies representative? How much of the forest do they control?

B. Decentralization, Resource Management and Other Customary Forest Management Institutions:

There is currently a debate in Mali over the integration of customary or traditional institutions into the decentralization and resource management processes. The process as it now stands has not recognized any forms of traditional local authority. Neither sub-village resource management institutions nor villages themselves have any legal standing (personnalité juridique ou morale) under the new laws (code organique, code des collectivités territoriales, loi determinant les conditions de la libre administration des collectivités territoriales, code des cooperatives, code electoral, or forestry laws).

There are many existing forms of village and sub-village-level institutions and authorities, including villages, village councils, Baouro or chief of the council of elders, village chiefs, land chiefs, forest chiefs, ton or customary village associations, local associations of woodcutters, and village forest police or forest protection committees such as the ogokana, allamoudiou and the walde kelka (Coulibaly 1994:15; Coulibaly 1994a; Sanogo 1994; Touré et al. 1993; CARE-Mali 1993; CARE-Mali 1994). None of these are recognized by the state, none have legal standing. The two means by which analysts have proposed that these types of organizations could be given
legal authority are: a 1959 ordinance on associations with private rights, and the cooperative movement (Toure et al. 1993:11).

The new forestry laws create rural woodfuel management structures (SRG), which are attached directly to the Rural Commune level of the CTDs. These new laws do not enable or encourage the formation or formalization of management institutions at the level of the village or with other traditionally existing institutions. The schism between the village level institutions, traditional authorities, customary organizations and the newly created CTDs at the level of the arrondissement raises numerous issues. Will the CTDs and SRGs be legitimate in local eyes? Will they be effective in drawing on existing forms of local organization and authority? Will they be formed with an eye toward integrating these local authorities and institutions or overriding them? If these CTDs and SRGs are not consistent with existing local institutions, which will lose local legitimacy—the local institutions or the CTDs?

There is also a negative side to drawing on existing local institutions. Village-level institutions are often hierarchical, unequal, non-representative, age and gender biased, etc. If state operations draw on local institutions will they in some cases be legitimizing these unaccountable structures of authority. If they don't they may be de-legitimizing the democratic process in local eyes.

In sum, the issue of integrating customary institutions into forest management is a sensitive one. If new structures are created by the CTDs that are inconsistent with existing structures, then there is a risk that these new structures will be deemed illegitimate in local eyes. The solution to this problem is certainly not to automatically legitimize or privilege local institutions, which are themselves often unequal and oppressive. Indeed, any recognition of non-accountable non-representative groups (e.g. village level or other NGOs) should be subordinated to the approval of accountable representative bodies. A first step toward working with non-state groups may be to require CTDs to follow, a process by which local resource management institutions are identified, and to require negotiations between the CTDs and each village within its jurisdiction as to the form and function of resource management units (rather than specifying them in the forestry code and its application decrees). Certainly, given the size of the CTDs, the approval of some accountable representative village-level authority should be required prior to any woodcutting in the forests surrounding that village.

C. Note on Laws vs. Projects:

DNEF and donors should reorient themselves toward general legal enabling legislation and incentive creation, rather than toward spatially limited projects. Projects in the forestry sector throughout West Africa have been administratively top heavy (e.g. RDM 1991:12), they have "...flogged collaboration with technical services, notably that of Livestock [Elevage] and Forestry...” (RDM 1991:12), they limit participation to the periodic group meetings (RDM 1991:12), which serve to legitimate project existence and often not much more.35

"Translation Note: "...fustige la collaboration avec les services techniques notamment ceux de l'Elevage et des Eaux et Forêts...”

35For a good critique of natural resource management projects see RDM 1991.
An enabling legislation approach has a number of advantages. First, it is global. It applies to all regions at once, hence avoiding the spatial structural problems of policy change. For example in the Energy II project in Niger and the integrated resource management project in Burkina Faso, project authorities tried to raise benefits to local woodcutters. Part of this was raising the price of wood (through producer price fixing). The wood merchants, however, went to non-project regions since the increasing of local benefits made the project regions economically un-interesting compared to non-project areas. In both countries, the projects used coercive techniques--such as bringing in army vehicles or requiring the merchants to buy from the project areas--to force merchants to purchase from projects. In addition, these projects created administrative structures with no legal standing (no personnalite juridique ou morale). Hence, the donors used their weight to later change the laws to legalize their projects. While this is one way to spearhead change, it creates project dependent actions and change while not allowing independent and perhaps better adapted actions that might arise in a more general enabling environment.
VI. Conclusions and Options:

On the whole, the new policies applied to Mali's woodfuel sector will devolve control of some yet-unspecified portion of the resource base to the Rural Communes and perhaps other Decentralized Territorial Collectives (CTD). It has also created an institution, the Rural Management Structure (SRG), through which the woodcutters can organize themselves and through which a portion of the tax on woodfuels can be channeled back into the maintenance of the resource. The new tax laws have also created incentives for managed woodfuel production and incentives for Rural Communes to organize SRGs.

Whether the rural populations will benefit from these laws will depend, however, on a large number of other factors. These include whether the CTDs actually represent the villagers and the woodcutters interests: whether the Forest Service will use the opportunities it has left for itself to extract profits derived from woodfuel commercialization from rural populations; and whether the SRGs created by the new laws will be dominated and used by notables or whether they will actually channel the resources they accrue back into the collective benefit of the community.

The main reasons that rural populations have not been able to retain the commercial benefits of the forest resources on which they depend for subsistence, is that these benefits have been systematically extracted from them. First, they were not permitted to engage in commercial activities without express permission from the State. Secondly, the State favored urban merchants over rural producers. Thirdly, State agents abused their authority to extract surplus from rural populations through extortion and through fining. Fourthly, the State itself used fining and taxation to feed its own accounts. The intention in policy circles is now to reverse these trends. While these intentions are expressed in both person and in texts, there are countervailing, historically rooted forces, including the background of forest agents and the ongoing needs of the State to support and reproduce its administrative and political apparatus. These forces will have to be continuously watched and challenged to prevent them from reverting practices back to old ways. The 1991 revolution and the National Conference was the beginning of an ongoing process. The revolution, however, is never over. The process of decentralization is always countered by ongoing processes of centralization and concentration. The objective of the decentralization process should be to put in place a continuous iterative process that acts as a permanent counterbalance to ever-present centralizing forces. If the benefits of Mali's forests are to accrue to rural populations, rural populations will have to have the means to engage in this countervailing process on an ongoing basis.

Below is a list of recommendations that may help assure that rural populations will reap the benefits of the exploitation and marketing of the forest resource. Many changes mentioned in this report can be made within the as-of-yet un-drafted application decree. The main work ahead will be to focus on the writing of this decree.
A. General Options:
Below is a list of the main recommendations emerging from this analysis. More detailed recommendations are listed in the following section, followed by a few research options.

1. Repartition of the Forested Domain:
   A. Repartition the entire Protected Forested Domain of the State among the Rural Communes (smallest governance unit) only. Following Repartition there will no longer be a Protected Forested Domain of the State.
   B. De-classify forests Classified as production reserves. If a forest is earmarked for production, de-classify it and repartitioned it among the Rural Communes in which it falls.
   C. Revise articles one through six of the "Projet de Loi Portant Principles de Constitution et de Gestion du Domaine des Collectivités Territoriales Décentralisées" to assure that the repartition of the forested domain and of the goods within it will not be carried out in an expressly top down manner. Make explicit and then present for public discussion the process by which the repartition of the forested domain of the Rural Communes will be affected.

2. Devolve Rights to Commercialize Forests to Local Communities Only:
   A. Require Rural Commune's approval for all commercial production within the Rural Commune's boundaries.
   B. Require approval of village level representatives (village council, chief, or some alternative form of representation) prior to any production within the forests surrounding a village.
   C. Create locally accountable representation in RuralCommunes to which resource control can be devolved.
      -This requires revision of the Electoral Code to admit independent candidates. If this is not done then the Rural Communes will not represent local populations. If they do not represent local populations and devolving control to them will not constitute local control.

3. Introduce and Support Equal Access for Women to the Benefits being Reaped from the Commercialization of Woodfuels.
   A. Focus "accompanying measures" on reaching women.
   B. Focus iterative policy review (see below) on the inputs of women, being sure to examine with them the question of their access to opportunities in woodfuel commercialization.
   C. Include women in these activities by conducting separate meetings with women and men when conducting information diffusion and in decision making. (For an example of where this separation method works see Burkina Faso, Ribot 1995a.)
   D. Include women proportionally in representation and decision making powers.
4. Replace Requirement of Management Plans with Minimum Environmental Standards and Agreement of Understanding:
   A. Eliminate requirement for management plans for commercial production of woodfuels.
   B. Establish Minimum Environmental and Social Standards.
   C. Require Rural Communes and Village representatives to sign Agreements of Understanding of standards and guidelines prior to commercial production.

5. Replace Quota with Production Ceilings:
   A. Eliminate all quotas based on limiting production on a national scale.
   B. Use locally based production ceilings to determine the maximum allowable production within a Rural Commune based on natural regeneration rates and other local uses of the resource.

6. Reserve Management Plans for villages and Rural Communes wishing to produce more than can be attained through natural regeneration:
   A. Rather than requiring management plans, management plans should be elaborated between Rural Communes and the Forestry Service for Rural Communes wishing to augment their production beyond the natural regeneration rates.

7. Create Channels for Redress:
   A. Set up accessible channels of redress, outside of the forestry sector, for disputes over the interpretation, use and implementation of forestry policies.

8. Create an Ongoing Iterative Public Process of Forestry Sector Reform:
   A. Create a process for rural input into forestry sector policy review.
   B. Conduct periodic public reviews of forestry practice and law.

9. Replace Spatially Limited Projects with Enabling Policies:
   A. Favor policy reforms over spatially limited projects.
   B. Support these reforms through accompanying measures.

10. Accompanying Measures:
    A. Support generalized law making, the establishment of rights and accompanying measures. Avoid projects that are limited in space and time. Get away from the project approach and head straight for a general application of the new regulations.
    B. Translate codes into all national languages—written and not written (for non written languages use phonetic transliteration).
    C. Disseminate texts to all villages in Mali.
    D. Conduct text readings and discussions designed around simplified explanations of new rights that texts confer.
    E. Train foresters as to the meaning and implementation of new laws, and as to their new extension role.
F. Create information diffusion system. Have periodic radio announcements of the urban prices of woodfuels, just as grain prices are announced by the Ministry of Agriculture. DNEF and the DNHE have a written proposal to this effect (RDM 1994m).
B. List of Options Outlined in Text:

Following is a list of the more detailed recommendations made in the text. They are all taken directly from the text and discussed in greater detail in the text.

Option:
- Review and rewrite articles 34 and 38 of the new code, in light of the comments in text.
- Establish a formal and required process for local input into the creation and management of Classified forests.
- De-classify all production reserve forests.
- Limit production in Classified forests to production required for maintenance purposes.
- Give surrounding villages all commercial rights for maintenance-oriented production in Classified forests.

Option:
- Eliminate the protected domain of the state. Divide this domain among the smallest CTDs (the Rural Communes).

Option:
- Make explicit and then present for public discussion the process by which the subdivision of the forested domain of the CTDs will be affected.
  If local control is to be established, make this a process of repartition among the smallest CTDs, not including other levels of CTD.

Option:
- Remove from consideration the privatization of natural forests. They are already available for lease. Remove from article 60 the words "ou naturelles."

Options:
1. Replace requirement of management plans with:
   a. Minimum Environmental/Social Standards, with
   b. Agreements of Understanding.

The idea is to create environmental and social guidelines for woodcutting. These guidelines might include ways of negotiating how much forest much remain untouched to continue to serve other village needs (for gathered products and pasture), how to incorporate the needs of transhumant groups, what cutting techniques optimize regeneration, how to maintain windbreaks, the maximum slope on which cutting can take place, etc. They may also contain suggestions as to how to cut to maintain a constant annual yield rather than taking a one-time harvest every ten years, etc.

The agreement of understanding would be a document signed by the representatives of the community wishing to cut wood (the CTD and representatives of all villages in which cutting is to take place). This agreement would explain the
standards and guidelines, and those wishing to cut wood could simply sign and agree to comply with those standards.

With this arrangement the role of the Forest Service would be 1) to explain the standards and guidelines perspective woodcutters, and 2) to monitor and assure that those standards were being met. In this manner, the rural populations would not be dependent on the Foresters for "Management Plans." Any group wishing to cut wood could do so by agreeing to meet the required environmental and social criteria. The CTDs and villages would be independent of the Forest Service. The Forest Service (or an enforcement branch thereof--to separate extension and policing), could, however, suspend production rights or levy fines in the event of non-compliance.

2. Management Plans could be reserved for those CTDs wishing to increase their production (see discussion of production ceilings to replace quotas, below). These Management Plans would be requested by the CTD or Village and would be elaborated in collaboration with the Forest Service. The Forest Service, CTD and Villages would all have to approve the plans before planned production could begin.

3. In the signing of Agreements of Understanding and in the Elaboration of Management Plans, the village-level representatives must in both case approve production in surrounding forests. This should not just be a decision of the CTD.

4. Translate standards and guidelines for production into all Malian languages.

Options:

1. Change the title "Quota" to "Production Ceiling."

   What has been described above is not a quota, but rather a production ceiling. This Production Ceiling should not be calculated on any non-local variables. The Forest Service should not be involved in setting the total National quantity of production. All production areas should be permitted to cut up to the ecological and social potential of the resource base.

   Calculate the production ceiling based on 1) the ecological potential of the resource, 2) the area necessary to maintain the multitude of other forest uses of villagers and pastoralists.

2. Production ceilings should be determined for CTDs and Villages who request to sign Agreements of Understanding (or higher output Management Plans--see below).

3. Basis for Production Ceilings should be Well Specified:

   a. Add to Article 6 a statement that makes clear that the production ceilings (called quotas in current Article 6) cannot be limited by any factor other than the regeneration capacity of wood in the area in question, other ecological criteria that make woodfuel cutting hazardous to the larger public good, or other local forest uses. Otherwise, there is a risk that the production ceiling will be used as a way of restricting and allocating access to production and marketing of woodfuels. This type of allocation, and associated rent seeking, is exactly what has developed with Senegal's annual firewood and charcoal quotas (see Ribot 1990).

   The production ceiling should not be calculated on any national-scale variables. It should not be determined as a function of demand--even if the aggregate production ceilings requested annually far exceeds demand. National-
level quota fixing or production ceilings based on demand should be explicitly forbidden in Article 6. If the aggregate of production ceilings exceeds demand this should be simply due to the fact that there is an oversupply of wood and labor to cut it. If there is an oversupply, reduction of the production ceilings should not be permitted to be used to address this situation. In short, all measures should be taken so that the production ceiling does not become a handle on the restriction of production, and hence rent collection on the woodfuel trade. All requests for production ceilings should be granted in all areas with ecological potential for woodfuel exploitation. The decision of where and when to exploit woodfuels should only be carried out in accordance with these ecological criteria and the local desire/decision to enter the woodfuel trade.

b. Develop simple guidelines for calculating production ceilings. I.e. explicitly outline the ecological and social criteria (or processes) on which production ceilings will be determined.

4. To reduce the opportunity for Forest Service agents and officials or Production Ceiling committees to allocate production ceilings for political, economic and social purposes: place a time limit on the period a CTD or SRG must wait for a production ceiling. Require that after the signing of an Agreement of Understanding, the committee charged with determining the production ceiling deliver their estimate within 30 days.

5. Make the representative of the CTD, being an elected official, the president of the ad hoc production ceiling fixing commission. Give this representative veto powers, which in turn can be overridden by a general vote by the Commune Rurale. This change would make the committee more of a council to the representative body than an independent decision making body in itself.

6. Translate guidelines for production ceiling determination into all Malian languages.

7. Change from Three production zones to Two. Those zones should be 1) Agreement of Understanding Zones, and 2) Management Plan Zones.

This change would eliminate the contradiction in the current code between requiring management plans and then having zones in which management planning is not required. It would also be consistent with the two forms of exploitation described in these recommendations. Further, in this manner, all production would be locally controlled. Since this two zone system does not require the production of elaborate management plans for local control to begin, there is no need to maintain uncontrolled zones.

In sum. 1) Change "quotas" to "production ceilings"; 2) give production ceilings to those communities signing Agreements of Understanding; 3) write up and publish guidelines by which the woodfuel production ceilings are determined; 4) make 30 day limit on the assigning of production ceilings; 5) Restructure representation on production ceiling determination committees--make the production ceiling commissions representative, and reconsider the commission to resolve problems over production ceiling establishment, perhaps moving it into the courts--e.g. create accessible recourse channels.; 6) translate these guidelines into all Malian languages; 7) change from three to two production zones based on Agreement of Understanding and Management Planning.
Options:

1. The payment of the taxes should be at the time of transport, that is, the time of deliverance of the transport coupon, and not at the furnishing of a cutting permit—as was the legal specification in the past.

2. In the domain of the CTDs the permit to cut should be eliminated. Instead, membership in a Rural Management Structure should be accompanied by an identity card specifying the name of the holder and of the CTD and SRG to which s/he belongs. This card would play the role of a cutting permit. It identifies who has the right to cut in a given domain. The cards should be delivered by the CTD.

In this manner taxes will not have to be paid in advance. Under this system any wood cut in excess of the production ceiling will simply not be privileged to a transport coupon/permit--i.e. the SRG will not be able to sell it. This should help to discourage overcutting. The SRG will have to coordinate among its own members the allocation of cutting rights. Some independent monitoring of cutting and transfers across CTD boundaries should also be considered.

Options:

1. Revise taxes so that the tax on the wood cut for charcoal is equivalent to, or higher than, that charged on wood. This type of taxing might help discourage the current trend toward charcoal and away from firewood.

2. Estimate the reproduction and opportunity costs and integrate them into the tax base.

   The current tax structure is regressive and encourages wastage of the resource. It should be re-figured. (See recommendation under research proposals.)

3. Change the zones to 1) Agreement of Understanding areas, and 2) Management Planning areas to be consistent with earlier recommendations.

4. Combine the exploitation tax and the transport tax for the following reasons:
   a. Administering—collecting, accounting for, controlling, and distributing the receipts—one tax is easier than administering two.
   b. A tax on woodfuel transport may distort woodfuel transport by singling out woodfuel transport from the transport of other products. It may make transporting woodfuels less attractive to transporters.
   c. There is no economic theoretical reason that both taxes cannot be collected at once and given the same name—e.g. ‘exploitation tax’.

Options:

1. Change the zones to 1) Agreement of Understanding areas, and 2) Management Planning areas to be consistent with earlier recommendations.

   This change will have the added benefit of reducing the complexity of this taxation system.

Option:

   Have CTD from which wood is taken collect taxes. Because the CTDs will get much of this tax, they have the motive to monitor wood cutting and to
collect the taxes. (Cf Burkina Faso and Niger where this method has worked well, see Ribot 1995a.)

Direct tax collection by the CTDs will also eliminate the problem of returning the revenues to the CTD once collected by the State.

Option:
1. Have CTDs collect the tax.
2. Employ members of the CTDs or SRGs in tax collection and monitoring.

Option:
Amend article 71 to specify that the confiscated products or the proceeds from their sale should be returned to the representative bodies of the CTD from which the product originated. Such a change in this clause would reduce the incentives for State foresters to engage in confiscations for state or personal profit.

In the event that the infraction is due to the CTD itself--i.e. systematically exceeding its production ceiling--then the revenues should go to some other forest management fund.

Option:
Reconsider article 93 equally implicating all criminal accomplices. In the past whole villages or even groups of villages in the area surrounding a forest fire were heavily fined when the perpetrator could not be identified (cf RDM 1994k). This practice was even used as a form of taxation. Some limits should be put on this practice, or limited criteria for defining accomplices should be specified. The practice of attributing collective guilt in the event that a community does not produce a perpetrator should be explicitly forbidden.

Option:
Reconsider article 96 giving forestry agents a portion of fines, etc. Financial incentives such as these had very perverse effects in Mali in the past and tend to have perverse effects on the patterns of application of laws. Those crimes with the highest fines or those that lead to the confiscation of the most valuable products tend to be pursued (RDM 1987a:29; interviews).

Study alternative incentive systems. This same system is also being put into practice in Senegal, Burkina Faso and Niger. A general study of the dynamics of this policy would be of great value for all of these countries.

Options:
1. Develop Accessible Recourse Channels.
2. Given the history of Mali's Forest Service, one option would be the creation of a citizen's surveillance committee funded by the taxes collected on forest products, that is constituted perhaps of representatives from each Circle appointed by Circle's elected officials. This committee should be provided with the means
to survey and to bring to court or recommend discipline for forest agents who interpret or apply forestry laws in an abusive manner. The committee would have the means to travel and the means to communicate with authorities competent to prosecute those who abuse or misinterpret forestry laws. In short, some easily accessible recourse channels must be created.

These recommendations are by no means designed to bring into question the reorientation of the Forest Service from a policing agency, as they were in the past, to an extension agency, as they intend to be in the future. These recommendations are just to insure that the incentives to reproduce the institutional dynamics of the past are removed wherever possible. If indeed, the intention is to change the institutional dynamics of the Forest Service, then these measures should not pose any problem or threat.

**Options:**

Support accompanying measures. The promotion of rural participation in the benefits of the woodfuel trade would be well served through supporting accompanying measures. These could include, among other measures:

A. Translation of the texts of the new forestry code into the written national languages, and phonetic translation into the non-written languages so as to enable the reading of these texts to all villages in Mali.

B. Diffusion of these texts to all villages in the forested sections of the countries.

C. Courses and instruction explaining to rural populations their new rights, powers, and recourse channels.

D. Diffusion of the same information over the radio.
C. Research Options:

1. Study of the Structure and Distribution of Income in the Woodfuel Sector.
   a. Currently proposed study:

   In the interest of controlling and collecting taxes on the flux of woodfuels entering the cities, it would be very helpful to understand the nature--as in the social and structural constitution--and magnitude of the interests underlying urban firewood and charcoal trade. The studies by Bertrand, Konandji, Madon, Mariko and Salah (1992) provide a solid material inventory on which to base such a study. The basic idea is that access to Bamako’s urban woodfuel market appears to be controlled by key actors (coxeurs--or perhaps just large “locatuer”/transporters) who, by dint of their knowledge of the markets, are able to reap large profits. The relation between their wealth, political and economic power, and policy implementation would be interesting to understand.

   During my last day in Mali, I learned that Alassane Kanote, Yiriba Traoré, Boubakar Diallo and Nampa Sanago are in the process of writing a proposal to study the structure of this market. I would suggest that this study be adopted by the RPTES. It is currently being conceived as a study to look at the current policies shaping the market, and looking at the number of actors and the types of interactions. The proposal lacks any theoretical basis, but it is in the right direction. I would be very interested in assisting this group to write a more complete proposal that examines not only the market structures and the policies shaping them, but also examines:

   1. the mechanisms that different actors within these markets use to maintain their profit margins and market shares, and
   2. the ongoing processes by which wealth and control are concentrated higher up in the market.

   These mechanisms of margin maintenance are usually linked to social identity, networks of information and of access to supply and to clients. To examine these factors requires an historical sociological approach. The study being proposed could be much better conceived and could provide a much better handle on how the benefits in these markets are concentrated. And hence, it could provide a handle on how to de-concentrate these benefits--that is, it could provide a way to decentralize some of the benefits to the rural producers from the large merchants higher up in the market. Given how well conceived the original proposal is, I would also recommend that the authors of the proposal be asked to help write similar proposals for the other RPTES countries and aid them in their execution.

2. Study of the relation between woodfuel cutting, agricultural clearing, and managed woodfuel production.

   If the real cause of woodfuel shortages is agricultural clearing (which it appears to be), then several questions about woodfuel management emerge: 1) is it worth slowing agricultural clearing and is this either economically, politically or socially possible (I suspect it is not); 2) if agricultural clearing is not to be stopped in the name of woodfuel provision, then what makes it worthwhile for peasants to grow woodfuel crops on agricultural land or to reserve land in natural forests for this purpose; 3) is the cost of producing woodfuel on agricultural land or the opportunity cost of producing on agricultural land or keeping forest in tree crops greater than the cost of importing woodfuel substitutes.
Study dynamics of woodfuel production in peri-urban areas. Surrounding Bamako there are indications that woodfuel production may have risen over the past several years. The number of ass cartes, which tend to have a limited radius of operation, carrying wood to the city has gone up. If this does indicate more woodfuel production in this agriculturally intensive area, then a lot could be learned about managed commercial woodfuel production by studying how and why it is worthwhile to produce commercial woodfuel in this zone.

This peri-urban study could help to determine the basis for a stumpage fee. It would constitute research on the actual costs of forest management in the absence of a project. Research on the costs of natural forest management in the absence of projects should also be conducted.

An additional question that may shape policy toward woodfuel management is: does woodfuel cutting in natural forests contribute to deforestation or is there sufficient natural regrowth (indications are that there is significant regrowth).³⁶

3. Study of the relative efficiency of traditional charcoal production technologies in RPTES countries.

There is reason to believe that the traditional technologies for charcoal production are the best adapted and most efficient available. There are, however, wide variations in practice, from the 1000 sack kilns of the Fulbe in Senegal to the two sack pit kilns of Niger. I propose research to identify the best kilns in the region and to diffuse the best techniques across the region.

a. Research on yield--find most efficient kiln in West Africa.
b. Hire best charcoal makers to teach everyone the technique.

³⁶Villagers in Senegal, Niger, Burkina Faso and Mali all claim that after seven years they can return to an area and re-cut. There has not been sufficient research to determine the yield in these un-managed natural forests, but this indicates that woodfuel cutting does not, has many documents proclaim, cause "deforestation." Rather, it causes temporary forest clearing.
Acknowledgements

I owe great thanks to Yafong Berthe and to Hamadi Konandji of Mali’s DNEF for providing documentation, contacts, and innumerable insights that were essential for the writing of this document. Sincere thanks are especially due to Max Wilton, Boris Utria and to Rebecca McLain for their insightful comments on drafts of this report.
Annex A: Spot Check of Charcoal Prices for Charcoal from Interviews, August 1994

<table>
<thead>
<tr>
<th></th>
<th>Dry Season Prices FCFA/Sack</th>
<th>Rainy Season Prices FCFA/Sack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodcutters' Price in Forest</td>
<td>750</td>
<td>1000</td>
</tr>
<tr>
<td>Wagon transport to roadside</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Roadside Price</td>
<td>1000</td>
<td>1750</td>
</tr>
<tr>
<td>Roadside Income</td>
<td>850</td>
<td>1600</td>
</tr>
<tr>
<td>Transport by Pickup (110km)</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Transport by Truck (110km)</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>Sales Price in Bamako</td>
<td>1800-1900</td>
<td>2250-2500</td>
</tr>
<tr>
<td>Income for Woodcutters who rent Pickups themselves</td>
<td>1150-1250</td>
<td>1650-1850</td>
</tr>
</tbody>
</table>

Note: Villagers claimed that transport price will probably go up soon. It is now the same as before the devaluation. They think it will go to 750. Recently in the neighboring town of Tigole it was 650 per sack. In addition, the price per sack in the city by my observations the day before these village interviews was 2750 to 3000 FCFA.

When these spot prices were taken in the rural areas the actual sales price for charcoal in Bamako observed in transactions the previous day was between 2750 and 3250 FCFA per sack.
Annex B: Tables for the Analysis of Income in Woodfuel Markets

The following two tables present the most current data available and leave room for the data necessary for the analysis of income in Mali's woodfuel markets.

Average Dominant Prices and Incomes in Bamako's Woodfuel Markets:
Firewood (11-12/1989)

<table>
<thead>
<tr>
<th>Actors</th>
<th>Price (FCFA/kg)</th>
<th>Expenses (FCFA/kg)</th>
<th>Profit Margin or Net Income</th>
<th>Quantity Produced Annually (tonnes)</th>
<th>Number of Actors</th>
<th>Annual Profits per Actor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Woodcutters</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Transport</td>
<td>2</td>
<td>?</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Wholesalers</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Splitters</td>
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<td>3</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vendors</td>
<td>15</td>
<td>5</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>305,400</td>
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</tbody>
</table>

Sources: Bertrand et al. 1992:47.

Notes:
- These figures taken from Bertrand et al. (1992:47) table 22, based on the "average and dominant" prices at each level of the market.
- I separate the transporters from the wholesalers since they are often not the same person. Often the trucks are rented by specialists in the woodfuel trade who then take the truck to pick up wood.
### Average and Dominant Prices and Incomes in Bamako’s Woodfuel Markets:
Charcoal (11-12/1989)

<table>
<thead>
<tr>
<th>Actors</th>
<th>Price</th>
<th>Expenses</th>
<th>Profit Margin/Net Income</th>
<th>Quantity Produced Annually (tonnes)</th>
<th>Number of Actors</th>
<th>Annual Profits per actor</th>
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</thead>
<tbody>
<tr>
<td>Charcoal Makers</td>
<td>23</td>
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<tr>
<td>Transport</td>
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<td>Wholesalers</td>
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<td>25</td>
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<td>Vendors</td>
<td>68-75</td>
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<td>12-19</td>
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<td>Total</td>
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<td></td>
<td></td>
<td>15.100</td>
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</tr>
</tbody>
</table>

Sources: Bertrand et al. 1992:36.
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