In conjunction with community farmers, ENDA Zimbabwe has reintroduced local tree species by establishing nurseries and planting young trees in areas identified by the community itself. These areas are enclosed, primarily to protect young plants against animals. All the operations, from selecting the seeds, to planting and fencing, were undertaken by community farmers themselves. Here, the trees are part of the community effort and are integrated with the community's other resources. This is what we are ideally seeking with ENDA, which has given the go-ahead for the operations.

The Charcoal Market: an Obstacle to Forestry in Senegal?*

by Jesse C. RIBOT**

Few political measures (apart from collecting taxes and dues) are rigorously implemented within the charcoal market in Senegal. This is due to a number of factors: namely the big physical, social and economic constraints weighing on wood-fuel conservation – contradictions implicit within the mandate of the Forestry Board – and the influence of the charcoal market on the State, which includes the Forestry Board.

In this chapter we will analyse the failure of political measures applied to the charcoal market, and examine what made these failures possible. All of these factors are part and parcel of the most general interests of the urban economy, the Forestry Board and powerful merchants. These factors divert the attention of forestry agents and village political authorities, thus allowing

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coal-men to undermine village economies by charring th forests for urban purposes.

Taking control of the charcoal market

This refers to the ability to circumvent government restriction relating to the charcoal market in Senegal. Although politica measures to control the charcoal market in Senegal were partl enforced, by and large they were circumvented. Three example examined are: the non-observance of the charcoal productio season, the choice of production areas where charcoa production is damaging village forests and lastly, unlimite production quotas. Some of the causes of this political failur are examined below.

The official charcoal production season runs from December t July or August, and covers a great part of the dry season i Senegal. But *surgas*[1] can be seen in the forest during month which do not fall into the authorised charcoal productio season. There is scarcely any effort to hide this, and charco production goes on throughout the year.

It can continue all through the year because forestry agents d not enforce the law in the forests and because off-season co can be sent to Dakar without any problem. The charcoa industry is subdivided into six main groups, namely the *surg* (rural charcoal producers), the foremen (a kind of *surga* actin as intermediary between *surgas* and charcoal bosses), th charcoal bosses (rural charcoal-merchants), the transporte (transport companies and drivers), the touts (town wholesaler and the Diallo *kerins* (retailers).

To be able to sell charcoal off-season, charcoal bosses a allowed to store charcoal by obtaining a special license. With licence to store, they can put their coal on the road side befo

[1] *Surgas* are workers in the charcoal market. Almost all of them are Fulas fr Futa Jallon in Guinea. They are all expatriate workers. The majority of them ha come to Senegal in search of work in agriculture and petty trade. The word su refers a young man living in a peasant compound who works in the fields exchange for accommodation, food and part of the crop. The majority among th become charcoal specialists only after failing in the agricultural sector.

the end of the production season and then get a licence to carry when they are ready to sell. Charcoal bosses use storing licences as a means to avoid the prohibition of off-season charcoal production. At the end of the authorized production season they are allowed to stock but hardly do so. When charcoal is needed, they take it directly from the forest, although of course they claim that it comes from their store. They are thus allowed to transport off-season-produced charcoal.

It is evident that forestry agents do not systematically apply the off-season charcoal production prohibition because they allow the production of charcoal in the forests and issue transport licences in circumstances when the charcoal could only have been produced off-season. For example, the very first day the season opens, many loads are granted transport permits and are taken to Dakar. This does not respect the minimum period of fifteen days required between the issuance of the production licence and that of the transport licence. Since at least one month (with well-coordinated effort) is necessary to produce licences to both carry and produce, actions such as these actually recognize and 'forgive' charcoal production before the authorized season. This proves that the production season is only minimally adhered to.

The first result of off-season charcoal transportation is the destruction of roads by lorries[2]. As the forbidden season includes the rainy season, charcoal-laden lorries entering villages and verdant areas sink in the mud, leaving road surfaces so deeply rutted that they become nearly impassable for cars and carts. It then becomes difficult for villagers to transport their produce to the market or to go shopping. Lorries also leave broken tracks in the forests. Besides, charring is less efficient in the rainy season, which leads to the felling of more trees to produce less coal.

Localisation of charcoal production

Choosing authorized charcoal production areas falls under the jurisdiction each region's forestry service. Each *surga* is allocated a plot. Charcoal bosses also have a say in the

[2] In the Kumbija area, charcoal loading is now carried out by night, discretely it seems (note of Anne Bergeret).

allocation of the plots. The lands are usually located just outside a village in a wooded zone. For example, there are about 150 *surgas* living in Daru Fall (a village of 570 inhabitants) and producing charcoal near the village.

According to forestry agents, cutting zones and lands are chosen in relation to wood availability and the ecological sensitivity of the forest and soil. Whatever large reserves of dead wood and good soil there may be in the surroundings of Daru Fall, the concentration of *surgas* represents an enormous pressure on the forest. Such a concentration is usual.

The people of Daru Fall were happy when charcoal burners first arrived in the 1984-1985 dry season. They regarded them as a supplementary source of income (especially given the low rainfall and meagre crops of the past ten years). Coal-men would rent huts and pay for their meals on a monthly basis. Later, however, villagers came to know that this trade meant the decline of their own resource base. The *surgas* caused the water level of village wells to drop, and they degraded forests where the villagers would hunt, collect fire-wood, fruits and leaves. While they were aware of these problems, the villagers had no means to expell the voracious tenants, who would often not pay their rent when the charcoal was sold.

Villagers helplessly watched their forests being destroyed. This is the situation. In the five villages we visited and investigated, they blame charcoal-burners for the decline of their forests and the disappearance of formerly abundant produce, especially fire-wood. Other forest produce also disappeared within a radius of 50 kilometers. This was noticed when studying the alimentary role of trees. Here also, villagers regard charcoal production as a major cause of scarcity (Bergeret: 1988, a and b).

Numerous conflicts between villagers and coal-burners, some of which were very violent (P.A.R.C.E. 1983:17) have been noted. In most cases, villagers wanted coal-burners to leave or pay their debts. In other cases that I witnessed, underlying conflicts resulted such as robbery and adultery. In the early 1970s, the Forestry Board adopted a non-official political measure by obliging the charcoal-bosses to obtain the consent of the village

chief before burning the charcoal in the surroundings of a village. This measure is not applied any more, probably due to the role of forestry agents in chosing wood-cutting areas. The choice of sites is now considered as a professional decision incumbent on forestry agents. These agents do not generally ask the consent of the chief of the village. The localisation of coal-men is henceforth decided and legitimised by forestry agents.

Analyzing the conceptions of forest resource renewal should involve recognizing the existence of several definitions of forest resource. For villagers, it consists of dead wood heaped in the sun, and in numerous other products mentioned in the first part of this article. For the charcoal-man working for cities, it is the whole tree from which these dead branches fall. Renewable production for villagers consists in cutting trees very selectively, or not cutting at all. A renewable (or continuous) production for charcoal-men consists in cutting trees and moving on to the next area. For the forest planner (national institutions such as the Ministry for the Protection of Nature and the Forestry Board as well as for international aid organizations), sustained production consists in clearing trees and allowing regeneration of the area in twenty-year cycles.

The production style and the needs of urban planners and the charcoal industry clash with villagers' needs. Indeed, they are contradictory. Villagers cannot wait twenty years for their forests to regenerate; they constantly need firewood and other produce. The unfortunate result of forestry in the urban melieu is the clearing of forests, leaving villagers with no choice but to go farther to find firewood or burn cowdung. They are left with depleted resources on which they nevertheless depend for their daily needs. There are daily pressures of providing for people's and animals' needs on the new green growth (grass, shrubs and young trees). Regeneration is compromised by the "pressure of population"; pressure which is due, firstly, to the reduction of charge capacity caused by charcoal production (the resource basis of the village) through the impact of urban forces. There cannot be a complete regeneration under these conditions. Forests become less productive as regards both national and local needs.

There is also the imbalance between the capacity of the charcoal men to enter a zone and the villagers' capacity to resist. Villages have sometimes resisted in the past. But the allocation of wood cutting areas by the Forestry Board now tends to justify the presence of the charcoal market. Conflicts still occur between villagers and coal burners. Some are settled by remunerations to the chief of the village and others by the intervention of forestry agents. Unfortunately, villagers have little if any claim now that charcoal burners have official protection. These charcoal burners work well and move on to the next village.

In the long run, only charcoal bosses and *surgas* will be the winners. Charcoal production is justified and protected by the Forestry Department. Essentially, forestry agents protect coal-men's (i.e. city-dwellers') access to forests. The continuity of national forest productivity is therefore undermined by the villagers' need to survive on forest resources spoilt by charcoal production. This degradation is due to the organization of the production area around villages and the (officially endorsed) lack of power, on the part of the villagers, to determine the usage of their own forests.

The practice of installing charcoal-men around villages reveals a lack of social and environmental analysis. Even if measures for reducing urban demand by increasing piles and stoves are successful, the impact of charcoal production in villages will not change. The number of villages affected may diminish, but the impacts on these affected villages will remain the same. To alter these impacts, the location of wood-cutting areas must both be based on ecological considerations and the social usage of forests. The right of villagers to protect and have access to their forests must be guaranteed and directly recognized.

Alternatives to quotas

At the opening of the charcoal production season the normal quotas distributed by the Forestry Board are quickly finished by charcoal bosses who have the financial means to employ *surgas* or to buy enough charcoal. When he has run out of his initial quota, the boss tries to get reserve quotas, which (as described in the previous chapter) are given to bosses who have used up their initial quota as quickly as possible. For example, the charcoal boss who has received the largest quota (the chairman of the biggest company) entirely used his initial quota (1 500 tons) for the area of Koumpentoum in the first three weeks of the season. A little later, he was granted reserve quotas of 2 000 tons as a reward for his quick exploitation (Madon: 1987). Bosses who voluntarily participate in reforestation are also favoured. For example, a cooperative which had 400 tons of charcoal (representing about 50 hectares of bush) has retimbered 6 hectares. This cooperative was allocated 200 extra tons representing an additional 20 hectares. The chairman of this cooperative calls his reforestation effort *ma cola* (my colanut) because the small presents given are called the 'price of colanuts'. These policies tend to favour those who can hire more *surgas* and have the means of paying a certain amount for reforestation.

Reserve quotas also run out. However, the number of reserve quotas delivered is much bigger than the total amount of quotas really reserved. In a certain region, a World Bank study has shown that delivered reserve quotas amounted to over 170% of initial quotas allocated in the region[3]. In another region they reached 80% of the initial quota. The surplus in this last region alone is considerably higher than the total national reserve quotas initially set aside. This itself is only equal to 10% of the initial national quota (ibid : 1987).

Most charcoal bosses complain that these reserve quotas are only given to those among them who have relations with ministers, members of agents of the Senegalese National Union of Forest Cooperatives (*Union nationale des coopératives forestières du Sénégal*), forestry officials or agents. Many of the charcoal bosses interviewed complain about not being able to have any reserve quota since these quotas go to chairmen of cooperatives. In fact, the World Bank's report shows that the distribution of reserve quotas is completely biased. Some bosses will exploit their initial quota of reserve quotas 10 to 17 times in a season (ibid.) Most of them get none.

In the last few years, 'clearing quotas' (for agricultural lands) were widely used when the other quotas had run out. Land clearing quotas were said to be accessible thanks to those who

[3] Study prepared by the author and realized by the World Bank (ibid : 1987).

had contacts with forestry workers. A higher official of the Forestry Department has even complained about not being able to stop ministers from giving quota applications to their clients. This channel was reduced by an effort to control fraud (ibid.). Of course, with these reduced clearing quotas, other channels became available. These include abusive use of reserve quotas, repurchase of other charcoal bosses' quotas (as mentioned above) and use of 'receipts'.

As already stated, a receipt is a document delivered to a charcoal boss when he buys charcoal seized from fraudulent coal-men – that is to say *surgas* producing without any licence outside an allocated area or off-season — chopping standing wood. This receipt is swopped for a transport licence. A boss who has no quota can actually walk into the regional forestry office and buy confiscated charcoal at 500 CFA francs per sack. The price was much lower in the past. With this receipt the charcoal boss receives a transportation licence and carries the charcoal to Dakar where it is sold.

The receipt acts as a subterfuge. A boss who has no quotas, whether normal or reserve, sends his *surga* to go charring without any legal authorization. The *surga* produces the charcoal on land which has not already been allocated. When he is ready, the boss goes to the forestry office and tells the official that he is aware of illegally produced charcoal. The charcoal is then confiscated on paper and sold to him. The forestry agent issues a receipt enabling the boss to go and pick up the coal. Then the receipt is exchanged for a permit to take the load to Dakar in a lorry, all papers being in order. In reality the charcoal boss thus buys a quota at 500 CFA per sack (the official price). He must also pay the burner, and so his profit margin is reduced. This is why receipts are not as valuable as proper quotas because they are more costly.

The stratification process is stressed because those who have access to reserve quotas do not have to buy them from other charcoal bosses or pay to get receipts. Since these last two solutions are more expensive by about 250 to 500 CFA per sack, the boss having direct access to reserve quotas has a much greater profit margin.

In short, additional quotas are easily obtained by the people who have the means and the right relations. From the beginning, influential individuals can get reserve quotas, then quotas will be repurchased from other charcoal bosses. When they have run out, bosses turn to receipts. This is how the initial national quota is exceeded.

It is difficult to know the distribution of different types of quotas without analyzing the transportation licences handed in on arrival in Dakar. In 1987, a World Bank study revealed that only a small number of records required by regional forestry offices were actually kept. Only 60% of the licences granted were recorded in large regional registers. For the registration of charcoal sold on receipts, only 30% of the sales and corresponding licences were recorded (ibid.). This low registration rate shows the bureaucratic inefficiency as well as the high fraud margin of forestry agents and officials.

The amount of charcoal entering Dakar exceeds by far the 1986-1987 national quota fixed at 102 000 tons. According to individual consumption figures, actual Senegalese urban consumption was about 180 000 tons, i.e. 175% above the total national quota (initial + reserve) (ibid.).

The only way the quota system was able to act in favour of reducing consumption was by increasing the charcoal price. This increase is due to receipt and quota purchases, the black market and the many small bribes now part of the charcoal trade. This is not due to scarcity stemming from a quota fixed below the demand. The increase is probably about 50 to 200 CFA per sack sold in Dakar, i.e. between 2.4 and 10%[4].

Results

Here are some results of the charcoal production control system in force:

[4] The charcoal bought with receipts and quotas acquired in the black market is sold at 500 CFA per sack. Then come all the bribes not accounted for. A quarter or one half of the supplementary charcoal produced may be subject to these additional costs, hence the 50 to 200 CFA francs per sack estimated.

- continuous damage related to production during the rainy season;
- deterioration of immediate village surroundings;
- low, if any, reduction in urban consumption;
- systematic production outside authorized zones in order to get receipts;
- fostering rapid forest exploitation by allocating reserve quotas to charcoal bosses who have first used up their initial quotas.

Political measures as they are currently applied do not reduce these impacts and may even increase them. They legitimize charcoal production in village surroundings and encourage charring outside authorized zones, i.e. in uncontrolled zones. Moreover, the quota system increases stratification within the market by facilitating access to quotas for wealthy or influential people (heads of cooperatives, officials of the union or socially high-ranking individuals). Besides, the quota system creates a black market quota and opportunities for bribery and 'gifts' (or a charge) in order to have access to quotas.

Generally, a policy encouraging or authorizing massive wood-cutting next to villages depending on forest resources is not a sustainable production policy but a continuous deforestation policy instead.

Causes of forestry policy failure

Factors related to the global context: built in contradictions

There are naturally many reasons why these political measures do not work as planned within the Senegalese charcoal market. Rather than one dominant cause, there are many contextual factors making this all more likely to happen.

The Forestry Board operates under constraints and contradictions. Heavy constraints encourage the increase of supply and reduce the demand for wood fuels. Reafforestation rates are low. Foreign currency problems restrict the possibilities of finding wood substitutes on a large scale. Domestic alternative solutions are likely to generate a significant reduction of the total demand in the long term. Also,

existing substitutes (improved charcoal and wood stoves, improved charcoal stacks) are disseminated relatively slowly. These alternatives can, and will probably play a great part to temper the growth of urban demand for ligneous fuel. However, they will not be able to stop it or invert the curve in the near future.

The Forestry Board which is in charge of protecting forests is confronted with pressures from the Ministry for the Protection of Nature and international aid groups regarding a reduction of the impact of the urban demand for ligneous fuel. The existence of the quota system shows (at least symbolically) that the Forestry Board works for the conservation of ligneous fuel. Quotas are impossible to apply however, given the huge urban demand and accompanying pressures to provide city-dwellers with fuel. The production of charcoal is also a source of income for the Forestry Board, thus increasing the pressure in favour of maintaining a high level of production.

In addition to fixing quotas below the demand, in the cities charcoal is really sold above the fixed price. The price is fixed to ensure cheap fuel to citizens, which is an effective subsidy of urban wages.

Reducing both price and quantity (without rationing) would inevitably bring about shortages. But these shortages are politically unacceptable and the Forestry Board would be considered responsible. Politicians have protested against forestry directors during previous shortages. The only way of solving the contradiction resulting from this situation is to exceed the national quota and/or to allow price rises, both of which have occured. Stated simply, fixing the national quota and the retail charcoal price are impossible. Their contradictory characters open the way to distortions which play an important role by stratifying the market and allowing abuses by powerful actors within the market in the Ministry for the Protection of Nature and the Forestry Department.

Social and political factors

Powerful factors within the market have acquired enough pressure capacity to thwart and influence policy at the conception and implementation level. Politically speaking,

charcoal bosses are the mightiest members of the charcoal market in Senegal. Not only are they powerful within the market, they are also influential in the ministries, the Forestry Department and among religious leaders. The origin of their power is historical, though it has been reinforced by current rules. This is illustrated by the organization of the market and the boss-*surga* relationship.

Charcoal bosses, cooperatives and quotas

Political measures organizing new charcoal bosses into cooperatives, jointly with the quota access system, has reinforced the position of the most powerful charcoal bosses within the market. Given that access to normal and reserve quotas as well as clearing quotas and receipts depend on access to officials and agents organizing and applying the quota policy, some powerful players make use of their influence to obtain what they cannot have normally.

These bosses, possessing sufficient social and financial resources, use them to have access to quotas and consolidate their grip on the market. The historical stratification of the market that we dealt with in our examination of the cooperatives, was strengthened by the selective access to policy formulation. Not only did these policies constitute barriers to becoming a charcoal boss; they have also marginalized the majority of charcoal bosses who are not among the most influential people.

The reduced competition, via these barriers, consolidates the situation of monopoly. This means the limitation of the total number of cooperatives admitted to the market. People who do not have the right relations, or money find it difficult to create cooperatives. Further, quotas are only granted to charcoal bosses (that is to say there is no direct access to quotas for *surgas*). This reduces the *surgas*' possible negotiating power by making the bosses the only group authorized to buy and sell charcoal. The monopoly of charcoal bosses in thus consolidated as any other means of participating in the market is ruled out.

As mentioned above, charcoal bosses fix the price as a group. Some of them even say that if they go beyond this price, the Forestry Department confiscates their charcoal at the request of

the National Union of Forestry Cooperatives. This is a concrete case of collusion made possible and actually happening because of a set of political measures in force, and thanks to the Forestry Board itself.

The charcoal boss-*surga* relationship

In Senegal's charcoal market, exchange takes place in a complexity of social relations. The situation is very close to the Nigerian grain markets, where the markets are not 'very competitive' given that the need to develop a customers' and agents' network, as well as the necessary knowledge to operate in the market, accounts for some degree of concentration in controlling the trade (Clough: 1986). In the charcoal market in Senegal, social relations not only determine how the job is done and increase the boss's control on the price, but they are also important as a criterion for entering the class of merchants or charcoal bosses.

Although charcoal production can be rewarding, most *surgas* are still dependent on their bosses. Perhaps there are also some extra-economic historical bonds originating from the noble-captive relationship. When the first stack is charred, *surgas* are generally economically solvent. However, their dependence on their bosses goes beyond employment, permission to produce, protection against forestry agents, and access to the market (i.e. quotas). Also, strong barriers hinder them from entering the circle of bosses, preventing *surgas* from overcoming their dependence by modifying their status. This situation is perpetuated by current forestry policies, especially quotas and the cooperative system in their present form which strengthen the position of charcoal bosses by facilitating their fixing of prices and other similar activities.

The influence of charcoal bosses

Rooted in the above-mentioned social and economic relations, this influence acts on the Forestry Department through many channels. The outwitting of the politicians takes place at the local level by recourse to small 'gifts' and social and political relations, while at the national or regional level, policy making and application are influenced through various social and political channels.

Small bribes at the local level account for much of the political failure or the failure to enforce decisions. This also applies to charring throughout the year; the cutting down of standing or protected wood; the permission given to charcoal bosses to determine for themselves the location of wood-cutting areas; the transportation licences granted before the regular period of fifteen days after the delivery of a charcoal production licence; and lastly the delivery of receipts.

A higher level of social and political relations may explain the initial clearing and reserve quotas and, in some cases, receipts. There are access channels via marabouts[5], ministers and direct relations with forestry officials and agents. Charcoal bosses can obtain quotas and probably other types of influence in the following ways:

- direct contact with regional forestry office agents;
- direct contact with officials of the Forestry Board and the Ministry for the Protection of Nature;
- direct contact with ministers (who contact the Forestry Board afterwards);
- contact with marabouts (who can influence ministers and officials of the Forestry Board and the Ministry for the Protection of Nature);
- and lastly contact with the National Union of Forestry Cooperatives (which is influential among ministers, officials in the Forestry Board and the Ministry for the Protection of Nature).

To sum up, both past and current market structures have enabled charcoal bosses to use political measures to consolidate their previous social, political and economic relations. This strengthening of the most powerful charcoal bosses — as individuals and as a group — has influenced policy making and

[5] The marabouts are very influential Muslim leaders. Many ministers and members of the National Assembly are their disciples (Copans: 1980, Cruise O'Brien: 1971). The influence and participation of marabouts in the charcoal market is often taken as given by the citizens of Senegal. The president of the National Union of Forestry Cooperatives will be himself a marabout, and he is also known as a disciple of an influential 'grand marabout'. While certain important members of the charcoal market obviously have links with the marabouts, it is not clear what role, if any, the latter actually play.

implementation. The various policies have failed because they have been thwarted by the capacity of charcoal bosses to partly influence and circumvent them. By supporting concentration and stratification, they have undermined the Forestry Board's regulation capacity, and have finally encouraged rather than prevented practices harmful to the environment (i.e. charring in protected forests in order to get receipts).

Conclusions

In Senegal, a number of pressures make the regulation of charcoal a difficult task to carry out. Among these pressures are the continuous urban demand, the political bias in favour of city-dwellers, and a powerful charcoal industry capable of influencing both policy and implementation. For ministers, for officials and agents of the Forestry Board and the Ministry for the Protection of Nature, for charcoal burners and merchants, there are inducements to continue following current models which circumvent politics. There are pressures and inducements to direct attention away from the needs of villages and environmental considerations, which are paving the way for the devastation of charcoal resources.

Concentrated charcoal production — to satisfy demand from urban centres — in the immediate surroundings of villages, hits the resource base of rural people hard. Coal-men themselves are based in villages. There they profit by cheap food and accomodation as well as roads facilitating access to forests. This access (legitimized by the law on state ownership of lands) is protected by the Forestry Board, while their activities leave the villages with severely compromised forest resources. Though policies are conceived to reduce the demand for wood-fuel and increase the supply, the problem of the destruction of village resources and economies — supported by current policies — remains unsolved.

For Senegal and the Sahel, no global analysis of the social and physical environment of charcoal production has been carried out to date, which makes it difficult to conceive or implement rational management policies for this resource. Attempts at reducing the demand and increasing the supply have only produced marginal effects, and this is likely to continue in the future. In the foreseeable future, urban demand for charcoal will

continue to grow in Senegal and most other African countries. The important effects of charcoal production on the environment must be studied. The production process must be managed in such a way as to minimize these effects.

Many impacts of wood-fuel production are already known and examined in this paper. The most immediate effect, before anything else, is the destruction of village resources. As long as the value of village resources is not recognized by political authorities, they will continue to be destroyed. However, certain historical, social, political and economic factors make a real village-based environment protection policy unlikely until city-dwellers, political authorities and merchants recognize its importance.

At the national level, the long-term consequences of the clearing of Senegal's forests include:

- the rise of the rural exodus (due to the destruction of village economies and resources);
- the scarcity of important economic produce provided by the forest such as timber, fuel etc;
- the loss of ecological functions of the forest such as protection and distribution of water, soil protection and climate regulation which play a major role in agricultural and pastoral regulation.

Urban people are directly affected by these important factors which undermine national economic growth and limit the profitability of exploiting rural resources. To achieve results at the national level, village resource management policies which take into account villages' interests and needs must be developed and carried out.

When policies are elaborated to protect the forests and the natural resource base, the most fundamental thing to recommend is to take into account:

- the social, political and economic structure of the market (including distribution of political and economic influence);
- relations between the market, the state and villagers;
- relations between local and national systems of land and tree tenure;

- both the monetary and use value of forest produce for village people.

Some specific accompanying measures could include:

- the study of social, economic and physical consequences for the environment of the production of wood-fuel (charcoal and firewood) for the cities;
- the improvement of the organization of charcoal production;
- the delegation of more authority to village and rural communities by giving villagers the right to control and take advantage of their own resources (the right to use, in other words);
- the training of forestry agents to work with villagers in both the conception and implementation of forest policies.

Contradictions concerning property, access and material interests will continue to arise. It is the environmental analyst's or the politician's job to remodel and carry out policies towards what is fundamental, i.e. ensuring sustainable production.