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#15 — Policy Reform A Necessary but Insufficient Condition for Better Forest Management

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Key Concepts

- Several countries in Central Africa have introduced forest policies aimed at increasing efficiency in logging and processing operations.
- The World Bank has strongly supported these policies, and has tied policy reform to structural adjustment loans, a powerful incentive.
- In Cameroon, which introduced a new forest law in 1994, policy implementation has

been very problematic because of the lack of political will and inappropriate policy sequencing.

- In the absence of effective enforcement, efficiency incentives may, paradoxically, encourage illegal logging and accelerate forest degradation.
- Credible enforcement requires the development of innovative public-private partnerships, implying a redefinition of the role of the state in Central Africa.
- One opportunity to promote better forest management is to tie concession allocation and renewal to countrywide certification backed by independent verification.
- Policies aimed at concentrating timber production and simplifying forest taxation can help to reduce the need for costly enforcement and government oversight.

Forest Policy Reform

In Central Africa, important productivity gains are available at every step in the chain of production, from the forest to the market place. In one concession in Gabon, the yield per hectare of okoumé was doubled at no extra cost by cutting off the buttress before felling (to reduce accidents and increase the portion of the trunk that is recovered), cutting off the branches (to allow the entire trunk and large branches to be extracted), and tracking trees with a simple marking mechanism (to ensure cutting of all inventoried trees and extraction of all cut trees). Similar opportunities exist in the processing sector. According to a mill owner in Cameroon, average mill efficiency could easily rise from 30 to 40%, and by investing in dryers and finishers, could reach 65%. Other productivity gains include the use of secondary species such as fraké and tali in the production of plywood.

Changing Behavior

Many of these improved practices have been shown to be profitable. So why aren't they adopted? First, there is the mistaken perception that improved logging is more expensive than conventional logging, which results in part from the failure of conventional logging to incorporate the costs associated with waste and inefficiency. Second, under conditions of high political and market insecurity, the up-front costs associated with improved logging (e.g., hiring a forest manager, carrying out more detailed inventories) may be prohibitive. Companies therefore tend to be risk-averse and favor business as usual practices. Third, if logging is already highly profitable, the additional margins offered by improved logging may be insufficient to promote innovation, especially under high-risk conditions. Although it may be profitable to adopt improved logging practices, it may be even more profitable not to.

The goal of forest policy reform is to encourage companies that are willing and able to invest in better forest management to benefit at the expense of those that are either insufficiently capitalized or not motivated to do so. Incentives and regulations are required to promote a process of technical and economic selection, whereby the efficient and productive gain at the expense of the inefficient and wasteful. The desired outcome is an industry that produces more value from less forest. Achieving this outcome requires both stroke of the pen reforms and long-term changes in government attitude and capacity.

Cameroon's 1994 Forest Law

In 1989, the World Bank commissioned a study of forest pricing and concession systems in Central Africa. The study provided specific policy recommendations, including the allocation of concessions by competitive bidding, higher area taxes, a free market in log exports (no log export ban), the use of performance bonds, and other reforms aimed at improving the economic and environmental performance of the forest industry.

Cameroon was the World Bank's flagship attempt to improve forest management in Central Africa through policy reform, and offers important lessons for the rest of Central Africa. The first round of negotiations between the World Bank and the government culminated in the 1994 Forest Law, which contained many elements of what the World Bank considered to be the forest policy reform "conventional wisdom." The World Bank believed that if the government changed the way it allocated, taxed, and managed forest concessions, it could prevent the worst environmental damage and increase tax revenue to help it deal with the country's pressing social and economic concerns. The need for reform was also motivated by the increased pace of industrial investment in wood processing and the huge increase in demand for wood from Asia.

Under the previous law, concessions were allocated based on mutual agreement between the companies and government authorities, typically at prices well below what the concessionaires are willing to pay. Companies had no incentive to manage the forests efficiently because they were unlikely to derive any benefit from good management. The law did not allow the transfer of concessions, and did not guarantee long-term access so that companies could benefit from previous practice during a second felling cycle. Since export taxes were not linked to the market price of wood, and area taxes were very low, loggers were encouraged to cut only the best trees and the government received less revenue. Companies constructed roads deep into the forest to exploit the rarest and most valuable timber species, opening up these areas to agricultural settlers and bushmeat hunters.

Boosting Revenue

Cameroon's 1994 Forest Law clearly succeeded in boosting tax revenues. After accounting for the effect of the 1994 devaluation, revenues went from 10 billion CFA in 1990, to 14 billion CFA in 1994, to 24 billion CFA in 1997. Over the same period, wood production rose from about two to three million m3. The government therefore increased its share of the value of the wood from 6,000 CFA/m3 to 10,000 CFA/m^3.

This increase was due to two factors. First, in 1995, the government invited the Swiss company SGS to control log exports, which accounted for 80% of forest taxes. Second, in 1997, the World Bank succeeded in having market prices introduced as the basis of export tax rates. These prices previously underestimated the value of logs by 30 to 40% and of processed wood by 90%, and represented a significant loss in government revenue. However, implementation of the law has been difficult, and the government has rendered meaningless the market-based export tax rates by manipulating the reference prices through obscure administrative decisions.

Concession Allocation

The 1994 Forest Law introduced concession allocation by auctions on the grounds that they are transparent (because any qualified company can bid and the criteria for allocation are predetermined), objective (because the company, not the government, decides what price to pay for the concession), and economically efficient (because it favors those companies that can make the most money, and pay the most tax).

1997 Concession Auction

In August 1997, the government auctioned 26 concessions with a minimum area tax of 1,500 CFA/ha, for which 190 companies submitted bids. The results showed that applicants were prepared to pay two to three times more than the minimum area tax, demonstrating that logging companies were willing to pay an area tax much higher than the 98 CFA/ha in effect at the time of the law.

But 16 of the 26 concessions were not awarded to the highest bidder. In most cases, concessions were allocated to the company ranked first according to the technical criteria, even if the financial bid was much lower. Six concessions were awarded to individuals who had not even submitted bids, but are known to have been key supporters of the regime. Strictly speaking, the law was respected because it reserves for the government the right to ignore the auction results in cases where the national interest is threatened, but the government's decision emphatically broke the spirit of the law.

Increasing Transparency

The 1997 auction succeeded in revealing the extent to which the forests was undervalued, but showed how hard it is to implement reforms that threaten the ruling class that depended on the discretionary allocation of forest concessions to garner political support.

Policy Sequencing

The failure to allocate concessions to the highest bidders resulted in a loss of 2 billion CFA/year to governments as tax revenues. Moreover, many individuals awarded concessions did not have the technical or financial means to start logging, let alone prepare management plans. The result was a severe shortage of logs, at a time that the demand for logs was rising rapidly.

The 1994 Forest Law, which called for a log export ban effective January 1999, led to a boom in mill construction; by 2001, processing capacity will have reached 3 million m3. API-Dimako, the French research project, estimates the average sustainable timber production to be 10 m3/ha, which translates into a maximum sustainable yield of 2.2 million m3, much less than the installed processing capacity.

Over-capacity of domestic sawmills provoked by the log export ban, the delay in concession allocation, and the fact that logging stops during the rainy season because of the poor quality road network, means that the supply of logs does not meet demand and thus domestic log prices remain high. In the absence of
any real government control in the forest, high demand and reduced legal supply have resulted in widespread illegal logging. Policies that favor inefficient processing, such as taxing processed wood leaving the mill rather than logs entering the mill, also work against better forest management.

Forest Taxation

Cameroon's 1994 Forest Law introduced a significantly higher area tax coupled with concession auctions. (Higher area taxes were offset by lower log export taxes in order to maintain a constant forest tax burden.) The World Bank argued that by increasing the cost of the raw material, a higher area tax encourages greater efficiency in its use, and that a company with large margins to improve efficiency is more likely to invest in reducing waste than in acquiring larger concessions. Area taxes have other advantages. They are easy to calculate, reducing the scope for fraud and they provide a constant revenue stream because they are unrelated to wood price fluctuations.

Intensification

Economic theory suggests three main effects of auctions and area taxes. First, because an area tax increases the fixed cost of logging per hectare, forest areas that were previously economically marginal to harvest (forests far from the mill where only the highest value trees are harvested) will become economically inaccessible. A reduction in the economically harvestable area will reduce log supply and increase log prices. Second, area taxes and a potential reduction in log supply will increase the cost of accessing the forest, which should lead to increased efficiency in its use. The magnitude of this effect depends on the existence of within-company innovation and waste-reduction possibilities, and replacement within the sector of more efficient companies. Third, auctions and area taxes should lead to an intensification of forest use. This could take the form of a wider spectrum of species and sizes being used. There are many reasons to expect this effect. Because the tax is paid regardless of whether logging takes place or not, area taxes (combined with auctions) will put companies that keep their forest idle under pressure to use it or sell it. Because the area tax is paid well before the logs are sold, the company is exposed to market and political risks that translate into a higher discount rate and faster depletion. Because of the reduction of the economically harvestable area, more wood will have to be extracted from a smaller area to meet a given demand.

Theory suggests that higher area taxes will lead to higher volume harvesting from a smaller area. There is evidence from Bolivia that this is indeed the case. Bolivia's 1996 Forest Law replaced a volume-based tax by a minimum area tax of $1/ha/year. This led to the reduction in the area under concession from 18 to 6 million ha. Of the abandoned forest, 9 million ha were given to local communities and 3 million ha to municipalities, thus achieving an important equity objective. The result is less area under concession, smaller concessions (the average size is 40,000 ha), a rapid increase in the share of value-added products among wood exports, and higher export earnings from a smaller volume of wood harvested.

Conservation Concerns

But some wildlife conservation NGOs are opposed to Cameroon's area tax-based auction system, because it is likely to result in smaller, more intensively logged concessions. They prefer conditions in Congo and Gabon, where a negligible area tax and minimal processing capacity have resulted in very large concessions that are under little pressure from logging-induced forest degradation or agricultural encroachment. NGOs can therefore negotiate antipoaching agreements with a few large concessionaires.

Although this position may make sense in the short-term, it limits the economic contribution of the forest sector, and is therefore questionable in terms of long-term development. A compromise solution, which has been proposed in Cameroon, is to set a high area tax, but to allow companies to pay no tax on areas of special environmental value. These within-concession set-asides could be designed in collaboration with NGOs to maximize the biodiversity benefit and minimize the revenue foregone.

Modeling

To get a better idea of the interaction between higher area taxes and enforcement, a model was developed using logging costs and forest inventory data from Cameroon. The model yielded the following findings.

First, in the absence of enforcement, area taxes will motivate a quicker exploitation of a concession and its earlier abandonment. It is unclear what the consequences of a quicker exploitation and abandonment of the concession would be for the environment. Unregulated harvest seems to be particularly troublesome where wildlife poaching (for which forest access is essential) is serious.

Second, better forest management requires policies to look beyond what happens inside the forest and to harmonize the productive capacity of the forest with balanced industrial development. In the absence of such harmonization, depletion may occur at a rate faster than anticipated. This is particularly true in the absence of enforcement.

Third, in the absence enforcement, area taxes may promote a faster depletion of the resource base. This is what happened in Cameroon, where higher area taxes and inadequate government control in the forest made
illegal logging both easy and profitable. In one 2,500-ha concession, over 12,000 ha were

actually logged. But from an environmental standpoint, area taxes will make remote forest areas uneconomic to harvest, thus potentially contributing to forest conservation.

Forest Management

Cameroon's 1994 Forest Law introduced the requirement for forest management plans. Whereas auctions and higher area taxes were believed to constitute sound forest policy, there was little empirical evidence of their impact on harvesting practices, which some feared would intensify. Forest management plans were intended to mitigate the potential negative effects of more intensive logging. They also responded to growing international support for the notion of sustainable forest management.

Ensuring Implementation

Forest management plans are often regarded as the answer to all of Central Africa's problems. They are relatively cheap to produce. The only one completed in Central Africa cost $500,000 for 1.4 million ha in northern Congo, or less than $0.40/ha, a fraction of the market value of the wood. But management plans will only be used if they meet the company's needs, and they will only meet the company's needs if it is in its interest to implement them. Governments therefore need to introduce policies that make compliance attractive. If companies are not motivated to behave better (which is emphatically the case in Central Africa), then governments need to provide such motivation through both incentives and regulations. Effective regulation is the only practical way to ensure that a beautifully written management plan does not gather dust on a shelf.

One way to encourage better forest management would be to make concession renewal conditional on compliance with forest management norms. Concession renewal has been shown to be a powerful incentive, and is easier to implement than performance bonds. But the region's governments have neither the credibility nor capacity to verify compliance. Since concession cancellation implies less tax revenue, governments would be under pressure to approve compliance. Nor could a government be expected to cancel a concession held by a politically influential individual. Even if the political will existed, the size and remoteness of the Central Africa's forests (Costa Rica fits into one of Congo's protected areas) far exceed the government's capacity to monitor conditions on the ground.

Certification

So who should verify compliance? One option (which Bolivia, another large country with a weak administration, is pursuing) is for the government to make the allocation and renewal of all concessions conditional on being Forest Stewardship Council certified, and to subcontract verification to an independent organization (e.g., SGS, Smartwood). Certification includes the forest management standards that have been proposed for Cameroon. These include the use of mapping to optimize the layout of logging roads, the use of directional felling and other reduced-impact logging practices, and the demarcation of community forests and environmentally sensitive areas as off-limits for logging. Making concession renewal conditional on certification could also increase the demand for skilled foresters and forest science.

The proposal that every concession in a country be certified is intended to improve its reputation as a source of "good" wood, and to address the fact that a large portion of the region's wood goes to China, where consumers are unwilling to pay a premium for certified wood, the standard justification for certification in European and North American markets. This approach would also avoid a vicious synergy, common in Cameroon, whereby foreign companies find it profitable to work in partnership with local businesses, which often engage in the most destructive and unsustainable logging. The proposal to delegate verification to an independent group is intended to increase the efficiency and credibility of the process.

Government Credibility

Concession renewal reduces (but does not eliminate) the need for monitoring, because even the threat of inspection encourages compliance. But this threat only works if the company believes that the concession will be terminated in the case of non-compliance. The success of this approach therefore ultimately depends on government credibility. Forest administrations in Central Africa are typically regarded as ineffective, because of entrenched corruption. One reason why corruption is hard to suppress is that so many government officials have made substantial investments in the status quo. The result is a classic prisoner's dilemma: the risks associated with denouncing corruption are much greater than the potential gains. Changing this equilibrium requires external pressure and support.

A commitment to independently verified certification could strengthen the hand of reformers within government by removing the monitoring burden from an understaffed and poorly equipped public sector, and by ensuring that verification is out of reach of those with a vested interest in bad management. A government's commitment to cancel concessions in case of noncompliance could be further strengthened by creating an independent observer with the authority to report on law-breakers, as has been proposed in Cameroon. Finally, the effective implementation of these reforms could be tied to structural adjustment lending.

Local Businesses

But if this approach were applied across the board, it would effectively exclude poorly capitalized national businesses that could not afford to prepare and implement a forest management plan. Some countries in the region have sought to promote a national entrepreneurial class by reserving part of the forest estate for their use. But the protection of local companies from the pressure of foreign competition has emphatically failed to improve the quality of their operations. These companies should be supported through special government funding, not by excusing them from the obligation to manage the forest properly.

Recommendations

Differences between countries and the presence of confounding factors make it impossible to arrive at firm conclusions about the effects of specific policy reforms. According to the World Bank's conventional wisdom on forest policy, a log export ban leads to lower domestic log prices, and higher area taxes to more efficient harvesting and processing. Yet, in Cameroon, increased log demand resulting from the rapid expansion in processing capacity, and reduced log supply resulting from the delay in concession allocation have maintained high log prices, which, combined with weak law enforcement, triggered a wave of illegal logging. Forest conditions are more stable in Congo and Gabon, but there have been no significant changes in the way that forest concessions are allocated and taxed in these countries, and pressure on the resource is much lower.

But we can provide the following "best bet" recommendations based on the available empirical and theoretical evidence.

- Better forest management can only work if it is implemented as part of a broader strategy of industrial development. The approach Cameroon took in promoting industrialization first, and worrying about forest management later, seriously undermines attempts to improve forest management, including certification.
- The opportunity cost of the proposed reforms should be carefully evaluated and, to the extent possible, minimized. For example, instead of a complete log export ban, a log export quota could be introduced, which would maintain government revenue from log exports while ensuring that domestic price of logs is not too far off world prices.
- Fraud and tax evasion should be heavily sanctioned. In Cameroon, 4 billion CFA could be recovered with no increase in the overall tax burden. Outlawing the practice, also common in Gabon, whereby a concession is awarded to a national, who then subcontracts with a foreign company, would capture another 2 billion CFA. These losses are twice the operating budget of the ministry of forests.
- An area tax should be set that encourages active loggers to concentrate production, thereby reducing pressure on the remaining forest where other environmental services (e.g., non-timber forest products, carbon storage, biodiversity) would be maintained.
- A portion of forest taxes should be invested in the research, training, and monitoring needed to generate a long-term revenue stream from the forest.

Roads constructed deep into the forest open up these areas to agricultural settlers and bushmeat hunters.

Bush fires set by forest settlers represent a challenge to better forest management.

For More Information

Technical Reports

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CARPE...What Is It?

Central African Regional Program for the Environment (CARPE)

Launched in 1995, the *Central African Regional Program for the Environment (CARPE)* engages African NGOs, research and educational organizations, private-sector consultants, and government agencies in evaluating threats to forest integrity in the Congo Basin and in identifying opportunities to sustainably manage the region's vast forests for the benefit of Africans and the world. CARPE's members are helping to provide African decision makers with the information they will need to make well-informed choices about forest use in the future. BSP has assumed the role of "air traffic controller" for CARPE's African partners. Participating countries include Burundi, Cameroon, Central African Republic, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda, and São Tomé e Principe.

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