Forestry Taxation in Africa: The Cases of Liberia and Gabon

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SUMMARY

The paper focuses on mobilizing resources through forestry activity in Liberia and Gabon. It advocates the management of forests in a sustainable manner while obtaining a fair share of rents arising from their exploitation. The paper describes the performance of a generalized area tax through a bidding process for allocating concessions in Liberia and presents the status of forestry taxation in Gabon. Both countries through reform have greatly simplified the fiscal terms for the industry, and further improvements are feasible. A deepening of the reform should consider phasing out export taxation and the consolidation of an area tax and auctions for allocating concessions.

Keywords: forestry taxation, area tax, concession auctions, Liberia, Gabon

INTRODUCTION

This paper presents the situation of forestry taxation and forestry reform in Liberia and Gabon. The paper focuses on mobilizing resources through forestry activities. It investigates the scope to adopt a generalized area tax through a bidding process for allocating concessions with the bidding parameter being the amount of tax to be paid. The rationale is that the area tax strengthens sustainable management by confining logging to areas that can be efficiently exploited. The selection of two cases allows comparing a bidding process in place such as Liberia with Gabon that still has not fully implemented allocating permits through bidding.

From regional experience, foresters do not favor competitive bidding because they see the lack of information and inadequate infrastructure as impediments to an appropriate bidding process. More than a year is needed to make an inventory of the area and it is costly. In several cases companies have found that the forest density in the concessions assigned was below the expected profitability threshold.

It has traditionally been difficult to arrive at reliable estimates of the potential rent capture from sustainable forestry in developing countries, reflecting mainly incomplete
and imperfect data availability. However, there is a sense among experts that historically the share of rent accruing to African governments from forestry has been very low. For example, it was recently estimated that in aggregate about 95 percent of value added in forestry in Africa during the 1990s accrued to forestry companies (with the remainder split among employees and government) (Whiteman and Lebedys 2006). By comparison, the estimated government take in some recent petroleum concessions around the world is above 80 percent of expected economic rent, with some contracts yielding over 90 percent (Cramton 2007). This suggests that to date governments have been more successful in designing revenue capture mechanisms for other resources.

While revenue has been increasing with reforms to the fiscal regimes in a number of African countries, for example by the introduction of concession auctions, there remains scope for further rent capture. Several possibilities are discussed here: designing the auction to encourage greater competition (the Anglo-Dutch two phase auction) and bidding over a variable that is responsive to realized changes in forest rent (using the stumpage percentage rather than the area fee as the auction variable).

Another possibility, to be used as either a complement or substitute for these measures, is a tax on positive cash flows. The practical problems in administering such a tax are similar for forestry and for agricultural concessions. It requires essentially the same data as is needed for the effective administration of the corporate income tax. The method calls for adding back depreciation allowances and interest expense, while deducting in full fixed investments as they are incurred. Losses incurred in the development stage of a project must be carried forward, ideally with interest, to be used to shelter income from tax when the project becomes profitable. Thus an account must be maintained until the tax is first paid (if at all), but the same is true for depreciation accounts and losses under the income tax.

Because this additional tax on forestry is related to the project’s rate of return, and takes account of the time value of money, it will not be paid by ex post marginal concessions. Like the stumpage fee, the tax distributes risk between the company and the government by being responsive to the realization of the forest economic rents, unlike the area fee that, under bidding would be determined by expectations for rent, rather than its realization. By absorbing more of the risk, the government could realize a higher expected share of the rent.

FORESTRY REFORM TAXATION IN AFRICA: THE CURRENT SITUATION

With overwhelming evidence of the increasing risks of climate change, preserving tropical forests is of paramount importance. In this regard, countries with abundance of forests are generating positive externalities.\(^2\) The key challenge for African countries in this domain is to manage their forests in a sustainable manner while obtaining a fair share of rents arising from their exploitation. The general objectives of forestry sector reform in Africa are to make the management of forest resources sustainable;\(^3\) to improve the business and investment climate; to introduce a tax system that is simple, transparent, and equitable; and to ensure an equitable sharing of forestry rents among the private sector, the central government, and local communities.

Forestry taxation should ensure that forest rents are shared fairly among stakeholders. It should also make investment attractive by ensuring equal opportunities and fair competition among private operators. Appropriate taxes combined with auctions can shape incentives toward higher forest yield by increasing harvesting per hectare and reducing timber waste.

With sustainable management in most African countries, which is still far from being applied, the forestry sector could be an element to promote development on a sustainable basis. Given increasing demand from international markets for both logs and processed products from the region, evolution of the sector should be guided with a view to protect the resource and it should focus on the following issues:

- **Source of fiscal revenues.** Currently, forestry produces only a relatively minor proportion of tax revenues. This may be because tax systems are poorly designed, compliance is minimal, or governance is weak—likely for all these reasons. With better designed systems, strengthened tax administration, and improved governance, revenues from the forest sector could be raised substantially.

- **Export earnings.** In some African countries, notably those in the Congo basin, forestry is becoming a key export, for instance is currently the first export in those in the Congo basin countries is already employed in the labor-intensive forestry sector, and another large proportion depends on forests for subsistence. With proper incentives, forests could become an important employer not only in logging and processing but also in forest management and tourism.

- **Labor markets.** Though statistics are not easily available it appears that a considerable proportion of the labor force in the Congo basin countries is already employed in the labor-intensive forestry sector, and another large proportion depends on forests for subsistence. With proper incentives, forests could become an important employer not only in logging and processing but also in forest management and tourism.

- **Domestic activity.** There is potential for a processing industry generating additional value added. With this in mind, some regional governments are limiting the

\(^2\) The maximum benefit is obtained if resources are kept intact; however, for doing so, those countries must be compensated for both foregone tax revenues and economic activity. Unless a mechanism to compensate these countries is in place, where beneficiaries of the externalities transfer equivalent resources, owners of forestry resources would continue exploiting their resources. The topic of compensation is not developed in this paper.

\(^3\) Taking into account the need to protect resources for the long term and thus contribute to address the global problem of climate change.
export of logs and taxing those exported at higher rates, in an attempt to encourage further domestic processing.

The private sector can bolster activity in the sector through job creation, remitting revenue to governments at all levels, and directly contributing to rural development in remote areas. However, the current institutional and regulatory situation places obstacles in the way of these private sector contributions.

Foreign investment is critical for sustainable development in Africa. In the last few years foreign companies have been investing not only in forest exploitation but also increasingly in processing. However, investment in Africa does not compare favorably with investment in Eastern Europe, Asia, and Latin America, for a number of reasons: (1) long distance to points of shipment and a lack of public roads; (2) high transport and harbor costs and a long delivery time for imported spare parts; (3) high costs of workforce training; (4) the need for costly private power generation in many locations; (5) banking sector reluctance to provide long-term finance for forest industry investments; (6) an investment climate that does not promote the stability of long-term investments; (7) governments that do not respect their commitments; and (8) in some cases a lack of a level playing field between formal companies and their informal competitors, who may have lower levels of both tax compliance and compliance with the principles of sustainable forest management.4

THE REGIONAL SITUATION

Forests, which cover a substantial part of the region, are vital to the economy of the Congo basin countries, through commercial exploitation, subsistence, and tourism. While the Democratic Republic of Congo (DRC) contains the largest area of unspoiled forests, Gabon and Congo, where population density is low, have the largest number of hectares of forest per capita. A number of countries in the region are important producers and exporters of roundwood and forestry products. The largest are Gabon and Cameroon; CAR, Congo, DRC, Equatorial Guinea, and Ghana are also important producers. Liberia is well endowed with valuable forest resources. Liberia’s forests are equivalent to about 45 percent of the remaining Upper Guinea Forest, which spans ten West African countries from Guinea to Cameroon. These forests contain a number of species that are in high demand on world markets. Consequently, Liberia has the potential to again become an important actor in the tropical timber market.

Despite its importance in the economic activity, tax revenues from forestry are low. Forest taxes in the region yield over US$150 million of government revenues annually. The main taxes are: (1) area taxes, with rates varying from CFAF 250 per hectare (ha) in the Democratic Republic of Congo (DRC) to CFAF 4,100/ha in Cameroon; (2) stumpage taxes from about 1.25 percent in the DRC to 4.5 percent in the Central African Republic (CAR); and (3) export tax on logs from 2 percent in the Republic of Congo (Congo) to 17 and 17.5 percent in Cameroon and Gabon. The DRC taxes exports of transformed products at 8 percent and the CAR at 4.5 percent. All the countries have taken actions to promote domestic processing. In Congo, the DRC, and the CAR laws specify that 60 percent of logs ought to be transformed domestically. Cameroon has a total ban on unprocessed exports of some varieties. Gabon’s forestry code states that 75 percent of logs must be processed domestically by 2012.

All of these countries levy a land rental and felling tax or stumpage fee, although in some cases the charges are specific rather than ad-valorem. Implementing ad-valorem rates in Liberia is being supported by the establishment of a chain of custody system, designed to track tree cutting, transportation and prices, thus supporting the main tax administration operations for these taxes.

In all countries there is a strong case for strategic reforms over time, such as (1) shifting the burden of taxation away from dependence on export taxes; (2) reducing the number of taxable species; and (3) moving from stumpage and export taxes to taxation based on area or on profits.

THE SITUATION OF LIBERIA

Because of weak global demand in key markets and political instability, Liberia’s timber sector stagnated after a fast expansion throughout the 1960s. The sector recovered somewhat through to the late 1980s, but the subsequent outbreak of civil strife lead to a cessation of the sector’s formal activities. Immediately before the imposition of a ban on timber exports in 2003, annual exports amounted to about US$150 million according to official sources.5 The ban was lifted in 2006 and production and exports were expected to resume by 2008. Production of forest products continued during the civil war, despite a UN ban on imports of Liberian origin. Exports officially recorded by the Forestry Development Authority (FDA) in those years include massive under-reporting. Under the transitional government following the civil war, 72 companies claimed the right to log, but all were found to be in violation of business law or their operating obligations.

All forestry concessions were canceled in 2006. The UN embargo has since been lifted, and resumption of large-scale forestry operations is intended. With the assistance of the Liberia Forest Initiative (LFI), a coalition of donor governments, lending agencies, NGOs and civil society groups,6 the legislation and organizational and administrative

4 These concerns were expressed by industry representatives at a meeting in Washington with the World Bank and the International Monetary Fund on January 15, 2004.

5 Exports registered by importing countries amounted to US$183 million in 2002.

6 Members of the LFI, in addition to the World Bank, include the U.S. State Department, the EU, the U.S. Forest Service, FAO, IUCN, the Environmental Law Institute, Conservation International, CIFOR, IATF, CGIAR, and Fauna and Flora International, as well
structures (including the FDA) have been modernized and a new fiscal regime has been put in place. All concessions must now be awarded on the basis of competitive bidding; the first concessions were auctioned in April 2008. The new regime also provides for preferential access for rural populations, revenue sharing between the center and regional and local governments, and fiscal incentives for further processing of timber. Agricultural concessions have so far occupied degraded land (forest cover previously removed), but there is possible interaction of forestry and agriculture income streams if concessions include the right to remove remaining trees.

Forestry Contracts

Recent reforms in the sector have been extensive. The Forest Development Authority (FDA), the main agency for controlling and regulating the sector, has been completely restructured. A reformed forestry law, the National Forestry Reform Law (NFRL) was passed in 2006. Under this law and the recently approved National Forest Management strategy, the FDA must manage the forest on scientific principles, and in consultation with local communities, for the benefit of communities, conservation and commercial forestry (the so-called “three Cs”). Large logging companies are required to achieve international standards ensuring their operations are sustainable.

In the new regime, there are two distinct types of forestry concessions, meant to achieve different objectives: Forest Management Contracts (FMC) are long-term contracts for large areas; and Timber Sale Contracts (TSC) are short-term contracts for smaller areas that will likely be cleared for plantations or farming. All contracts are awarded by competitive bidding. The Public Procurement and Concession Act (PPCA) of 2005 specifies a process that is transparent and seen to be fair.

Successful concession bidders will post a performance bond, reach a social agreement with affected communities in the vicinity of the concession, and share rent with the government through an area tax, stumpage fees, and export taxes. The area fee is determined by the bidding, and the stumpage fee and export tax vary by species. In addition, to encourage further processing of timber, the export tax on wood products is set at half the level of taxes on exports of roundwood. This structure of taxes is similar to that prevailing in most of the timber producing countries in the region.

Administration of these taxes will be supported by a chain-of-custody system through which all timber must be tracked and which requires accurate records from maps of harvest-trees to transport waybills to export permits. The system is run independently by SGS Group, a private Swiss inspection company.

By July 2008, six TSCs had been auctioned and awarded. Three FMCs have been auctioned so far. Other auctions were to take place later in 2008.

Contracts and Concessions Review

In 2006, the Public Procurement and Concessions Commission (PPCC) with support from international partners (UN, World Bank, EC, USAID) undertook a review of contracts and concessions signed under the NTGL (October 14, 2003 to January 16, 2006). This review process was necessitated by the exceptional circumstances surrounding the long-term civil conflict and the breakdown of the rule of law. It was a one-time effort and not meant to establish a precedent or legal justification for reviewing, modifying or canceling contracts by successive Liberian governments.

The objective of the review was to determine whether the contracts and concessions were undertaken openly, transparently, and according to international standards. As a result of the review, two rubber concessions were recommended for renegotiation, and one oil palm concession for cancellation.

Fiscal Terms for Commercial Forestry

Sustainable harvesting of Liberia’s forests resumed following the lifting of the United Nations trading ban in 2006. In anticipation, the authorities have put in place a new system of laws, regulations and forest fiscal regime to govern sustainable management and utilization of the forest, to capture an appropriate share of the forest economic rent for the budget, and to use forest development as a driver of economic revitalization, especially in rural areas.

The National Forestry Reform Law of 2006 (NFRL) provides for stumpage fees, land rental fees, and forest product fees (interpreted as fees associated with the production, registration, transport, transfer of ownership, use or export). The fees are to be set by the Forestry Development Agency (FDA) and revised periodically. FDA regulation 07-107 has set the main fees as follows:

- **Stumpage**: levied on the fob price of logs, at three ad valorem rates, 10 percent; 5 percent and 2½ percent of the fob price of the log, depending on the category of species.\(^8\)
- **Basic area fee**: US$2.50/ha per year for Forest Management Contracts (FMCs - larger, long-term concessions), and US$1.25/ha per year for Timber Sale Contracts (TSCs—smaller, short-term concessions).
- **Export taxes**: for logs, levied on the fob price of logs at three ad valorem rates (as with the stumpage fee), 10 percent; 5 percent and 2½ percent. Exports of processed wood products are taxed at half the rate of those for log exports.

There are in addition a number of minor charges for particular services, and charges on imports and exports (e.g.,

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\(^8\) On private land where the trees have been artificially regenerated, the stumpage fees are reduced by half.
inspection fees, PSI fees, and port charges) that apply to forestry, and more generally to all transactions. Finally, in addition to taxes and fees, concession holders are required to deliver services to local communities.  

Tax rates in Liberia are broadly comparable to those in other countries in the region, although the export taxes on logs, at rates up to 10 percent, are somewhat lower than those of other producers (for example, the tax is 17 percent of the fob price in Gabon, and 17.5 percent plus a species-specific surtax in Cameroon). Like all other countries in the region, Liberia levies a lower tax on export of processed wood products, although the gap (50 percent) between the tax on roundwood and processed exports is smaller in Liberia than in other countries (for example, in Cameroon, the tax on processed products is 2½ percent of the fob value, about a tenth of the tax rate on roundwood; and in Gabon the tax on processed exports is zero).  

When considering appropriate tax rates and revenue potential of these taxes, it is important to understand that the revenue yield of any instrument will depend on the other instruments and total revenue will be determined by the complete fiscal regime. In particular, when as in Liberia concessions are allocated by competitive auction, one would expect a negative relationship between bid amounts and tax levels—for example; a higher stumpage charge would lead to lower winning bids. For this reason it is appropriate to view these taxes as serving the role of establishing a floor for the public share of forest economic rents, from which auction bidders compete by offering (positive) premiums over this floor (operating in this way similarly to a reserve price). Consequently, as experience and data are gained on auction outcomes, the taxes could be adjusted periodically to exploit this floor strategically to improve auction outcomes.  

The base for the stumpage fees and export taxes is the fob invoice price. Establishing the market prices of logs and wood products is often more difficult than for other natural resources such as oil and minerals. Timber is not a homogeneous commodity, and international price databases are imperfect, since there are dozens of species, wide quality variations, many products (logs, sawnwood, veer, plywood, molding, etc.) and sizes. Often different segments of timber markets are not large enough to harmonize prices, and there are, in general, no organized spot or forward markets. Market niches are frequent in the industry, and for the same product, price may vary from contract to contract, depending on the quality of trade ties established among transactors and other idiosyncratic factors. In addition, in many tropical countries, companies are vertically integrated, further reducing the volume of arm’s length transactions.  

There is one independent source of data on prices: the International Tropical Timber Organization (ITTO) provides a twice-per-month list of prices of selected products. But the list is far from being comprehensive. In addition, the data is based on surveys of firms in the industry, which are in effect asked to provide proprietary data, so there may be systematic biases in the data.

Under regulations, the FDA is required, along with the chain of custody firm, SGS, to maintain a database of prices, based on public and other sources, which fob invoice prices will be tested against. It is uncertain how discrepancies (which experience in the region suggests will arise often) will be resolved, if an agreement between the FDA and the taxpayer on the transaction price is not forthcoming. This uncertainty is a potential deterrent to investors. A mechanism to settle these disagreements will need to be developed.

The taxes considered here have different characteristics for ease of administration, and for producer decisions and behavior. Each has advantages and disadvantages, making a balanced approach, using a variety of instruments, appropriate. One traditional advantage of export taxes on timber and processed products is that they are relatively easy to levy and collect. Differentially high export taxes on logs (and quantitative export controls) have also been used to encourage greater domestic processing of timber before export. It is argued below that export tax is a weak and often inefficient means to encourage investment in domestic processing. In addition, with an effective chain-of-custody system in place, administering stumpage fees on logs should be no more difficult than administering export taxes, thus largely negating the first argument. Finally, export taxes distort consumption, encouraging domestic use of logs and log products rather than production for export. For all of these reasons, it would be beneficial to eliminate the export taxes. In the absence of logging no export taxes were in fact being paid. Thus, to maintain the degree of expected rent capture from the taxes, the stumpage fees should be increased to incorporate the previous levels of export tax. It has to be emphasized that implementation may prove difficult and could pose significant revenue risk due to weak tax administration. The institutional constraints could mean that the recommended reform might take several years to implement.

There are few grounds for not making this change quickly. For the TSC contracts already signed, it is likely that their plans are to export most of their log production; if so, a doubling of the stumpage fee would not represent a material change in the fiscal environment they face. On the other hand, it would be important for FMCs—no contracts for which have yet been signed—to have certainty about the taxes they face, in particular before irreversible decisions are made on investments in further processing. This argues for making the change quickly. It would be appropriate to make the change revenue neutral, raising the stumpage rate to raise approximately the same amount of extra revenue as lost on the export tax, based on an estimate of the likely share of processed wood exports on average across all concessions.

The law is not fully clear on the treatment of natural trees that may be harvested on agricultural concessions or other land. There is no particular reason to treat these differently from other natural forest, so stumpage (and export tax where applicable) should be charged. On the other hand,
there has been discussion of whether the harvest of rubber trees should be liable to forest taxes. We take the view that production of timber resulting from planting for agricultural purposes should not become liable to forestry taxes, where exploitation is undertaken by the agricultural concessionaire.

Experience with the Auction Mechanism

The Public Procurement and Concessions Act (PPCA) of 2005 requires that contracts for significant forest resource licenses be tendered to the public. Auctions of concessions began in early 2008. As of June 2008, 3 FMCs and 6 TSCs have been tendered by the FDA, and the TSCs have been awarded.11 Four further FMC auctions are currently being prepared.

The auction process appears to have been credible; reserve bids were used for all contracts, which were necessary in two TSC bids, which required a second round. However, errors in the quoted timber volumes appeared in the TSC bid documents and in the FMC documents. Despite these errors, none of the 13 companies that bid asked for clarification.

Notable characteristics of the outcomes include the following:

1-Some bidders appeared to lack understanding about how to determine an appropriate bid, suggesting that there is a learning curve for these auctions. For the TSCs, besides the fact of the errors in the bid document, there appears to be little correlation between the available timber and the bids submitted. This suggests that the companies have failed to develop a valid business plan and undermines confidence that winning bidders will be able to meet the land rental commitment over the concession period.12 Since the process was new, it should be expected that there would be a period of learning for both the FDA and the bidding companies.

2-Winning bids for TSCs ranged from US$1.91 per hectare per year, to US$20. Bids for FMCs ranged from US$3 per hectare per year to US$26. Bids in this range suggest that the authorities can expect a significant increase in revenue from forest taxes and fees. Other countries that have introduced concession auctions over area fees have experienced such an increase. In Cameroon, area fees rose from about €0.50/ha per year before the introduction, to the area of €5 on average (and up to €13 in some cases). Ghana, which also auctions concessions with bids over area fees, also experienced an increase in revenue.13 14

Although in a number of auctions the bids appeared unrealistically high, the Cameroon experience suggests that some caution is warranted. In Cameroon the average winning bid on smaller short-term concessions (similar to TSCs in Liberia) over the period 2000–2007 was €21.3 per hectare (about US$34 at the mid-2008 exchange rate), and for larger, longer-term concessions (similar to FMCs), the average winning bid over 1997–2007 was €3.8 (about US$6) per hectare.

3-Bids could have been too high because companies had not prepared realistic business plans. Another potential problem associated with unrealistic bids may arise from the level of the bid bond. In Liberia, the bid bond was set at US$50 000 for the large FMC, and about US$25 000 for the two smaller FMCs. If the bond is low, then default costs are low, and consequently bidders are effectively bidding for options on concessions, rather than the concessions themselves.15 As experience is gained, the regulations on the amount of the bid bond may need to be revised.

The key to good auction outcomes is to ensure a high degree of competition; that means in particular discouraging collusive, entry-deterring and predatory behavior. If completion problems persist, a simple-to-understand two stage auction, called an “Anglo-Dutch” auction, has been shown to often yield good results in natural resource and other bidding situations. This design exploits the fact that, while ascending and sealed-bid auctions are each vulnerable to collusion and entry-deterring behavior, the combination is much less vulnerable.

The Anglo-Dutch auction contains a sealed auction stage, similar to the current auction design for TSCs and FMCs. However, that stage is preceded by an ascending price auction. In an Anglo-Dutch auction, the auctioneer begins by running an ascending auction in which the price is raised continuously until all but two bidders have dropped out. The two remaining bidders are then each required to make a final

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11 In order to promote Liberian business, areas less than 100 000 ha are reserved for majority-owned Liberian companies only (NFRL, sections 5.3g and 5.4g). There are no restrictions on company ownership for larger FMCs. However, for these contracts, bids may be adjusted using a margin of preference for domestic bidders, although the PPCA requires bidders to be informed of the criteria in the bid documents (PPCA Section 58(3)(i)(i)). Companies that wish to bid must prequalify (FDA regulation 103–07; Schedule 1), to verify inter alia that they are: a registered corporation; in good standing in tax payments; and not bankrupt. In addition, all bidders must post a bidder’s bond equal to 1/6th of the legislated annual area fee (exclusive of the bid premium). Subsequently, the high bidder must post an annual performance bond worth a minimum of US$25 000 to US$250 000 (depending on the contract area), or half of the expected government revenue for the first year, up to a maximum of US$1 million (FDA regulation 104-07, sections 43 and 61).

12 The FDA has attempted to work with several of the winning bidders to develop realistic business plans.

13 The approach of allocating concessions according to competitive bidding over area fee apparently emerged in the region under the influence of World Bank work on this topic (Grut et al. (1991)).

14 As in Cameroon, auctions in Ghana have a similar structure to those in Liberia. There is prequalification and an independently determined reserve price; a bidder bond requirement; and conclusion of a social agreement with local communities. The general impression is that the auction mechanism is a more fair and transparent way to allocate concessions than the alternatives, and that the conduct of actual bidding has been fair.

15 Furthermore, if under-financed firms can avoid commitments through bankruptcy, then an auction process actually gives them an advantage over better-financed competitors. This is one reason that financial bona fides need to be verified in the prequalification phase.
sealed-bid offer that is not lower than the current bid price, and the winner pays the winning bid.

In the Liberian auctions, as in the auctions in Cameroon and Ghana, bidders submit a proposed area fee payment. The winning bidder will also pay a fixed stumpage fee, and, in the current regime, an export tax, both at a rate known in advance of bidding. One motivation for the stumpage charge is that actual tax payments will more closely reflect ex post realized profit. This reduces the risk of the forester. In normal circumstances, a stumpage fee, which is in the nature of a sales tax on a commodity, would be distortionary, in that it affects production decisions by reducing the marginal benefit of production. However, this argument carries less force in the case of timber, where production is often determined more by administrative means, through a forest management plan. Thus the stumpage shares risk differently between the government and the forester in a way that may benefit the forester, while having only minimal impact on the cut. Moreover, with a stumpage fee, in contrast to the area rent, the government’s share increases with the profitability of the concession.

This advantage of the stumpage charge could be exploited by using the stumpage charge rate as the bidding variable. (In practice, the whole species scale, but the relative levels could be fixed so that only one bid is made.) In this regime, bidders would compete on their willingness to share revenue with the government (subject to a minimum stumpage charge, and perhaps also to a given annual land rent payment). Experience with oil concession auctions has shown that bidding over production shares, rather than rentals which do not vary with production, typically increases government revenue, by reducing bidders’ risk.16

It is worthwhile to consider these and other options for auction design, with the goal of optimizing the public share of revenue from the forest resource. The key to any successful procedure is a high level of bidder participation. Taking into account bidders’ needs is thus critical in getting participation; for this reason, reform should proceed inter alia through a process of consultation with prospective bidders.

**Strategy for Encouraging Further Processing**

The new forestry legislation, the NFRL specifies that fees be set to encourage further processing of timber while maintaining a fair rate of fees. This goal has been implemented by placing an export tax on roundwood, as indicated previously, with tax at half rates for processed product exports.

In addition, the contract will require the concessionaire to make agreed investments in further processing, according to a specified timetable. At the contract bidding stage, it is intended that a second envelope will be submitted as part of the bid that will outline the bidder’s commitments to invest in further processing. These plans will be taken into consideration by the FDA in selecting the winning bid.

The NFRL provides for application of general tax legislation. The LRC has few specific provisions for forestry. With regard to general provisions, it is possible under the LRC to grant special incentives to forestry projects, under 204(e). With 204(e) amended as proposed, forestry will not qualify for incentives, although investments in wood processing will continue to qualify.

It is extremely difficult to achieve an effectively targeted incentive through export taxes. There are at least two aspects to this. First, a lower export tax rate for processed wood, as currently in place in Liberia, encourages low-value added processing, but actually discourages high value-added production. In fact, the extra value added in processing needed to qualify for the lower tax rate could even be less than the tax reduction obtained, so that processors gain less than the government loses, representing a net loss to the economy.17 It is difficult to calibrate export taxes to provide an effective incentive across processing representing different degrees of value-added.

Second, and more important, experience in other countries, including in the region, is that differential export taxes or log export quotas or outright export bans could have the counterproductive effect of threatening sustainable forest management. In a number of countries that used export taxes or quantity restrictions on logs to encourage investment in processing—Cameroon, Ghana, and Indonesia are examples—a domestic processing capacity developed that outstripped the ability of domestic forests to supply timber on a sustainable basis. This overcapacity, combined with weak enforcement and poor governance, promoted illegal logging, corruption, and over harvesting of forests.18

The revenue cost of processing commitments placed in forestry contracts is nontransparent, so that their effectiveness is difficult to determine. A company considering entering a bid on a concession, will take account of the cost of all commitments, including social expenditures and required

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16 See Cramton (2007). As discussed there, variations on this principle can be envisaged. For example, the bidding could be on sharing revenue in excess of an amount to allow foresters to recover development expenses.

17 For example, consider a log export with value US$100 fob. With a 10 percent export tax, the after tax revenue is US$90. Now suppose that at a small cost, US$4, the producer can undertake an operation that would convert the log into a processed wood product, which would halve the export tax rate. Assume, in the extreme case that this processing does not add positive value at world prices—that is the fob price of the processed product is also US$100. Then on export the producer would pay US$5 in tax, and have US$95 after tax. Since costs are higher by US$4, the net gain is US$1. However, the Treasury has lost US$5 in tax revenue, so the net gain to the economy from this processing is negative US$4. Karsenty (2008) argues that the economics of many primary processing activities—especially sawmilling—is of this form, especially since in simple mills, about two-thirds of the timber volume is lost in the sawmilling process, and because world prices for sawnwood tend to be low relative to the world price of the roundwood.

18 See World Bank (2003). More recently, Gabon introduced new fiscal and other incentives for further processing. This led to overinvestment in the sector, reflected in a considerable amount of non-performing loans of the banking system arising from wood processing (see Melhado (2007)).
investments for further processing, in determining its monetary bid. Where the bidder would be required, if it wins the contract, to undertake investments that in its view do not pass a market test, or if it must undertake the investment on a timetable different from what it considers appropriate, the bidder would likely reduce its monetary bid for the concession to compensate. Thus, the processing commitments work as an incentive by, in effect, subsidizing the log inputs, just as with direct incentives like a differential log export tax. Moreover, since the amount the company would otherwise have bid is not observable, it is not possible for the authorities to directly determine the cost of the incentive to the treasury.

It would be better to direct any investment incentive for processing at the investment itself, rather than through subsidizing the log inputs. Both an export tax and a processing commitment under the concession contract in effect subsidize log inputs. Furthermore, there is no compelling reason to favor investments in log processing over investments in other sectors of the economy. For this reason, an appropriate approach would be to subsume fiscal incentives to processing in the general incentives to invest under the LRC, placing these investments on the same footing as other manufacturing investments.

At the same time, investments in wood processing would be encouraged by improving the infrastructure of logging, and strengthening the management of logging operations, grading and pricing logs appropriately, and managing efficient transportation of the output. In this regard, encouraging training in grading, sizing, pricing of logs and in other processing skills, as well as identifying opportunities for cost cutting along the forestry value chain.

Revenue Sharing and Social Agreements

Two aspects in particular of the fiscal terms for forestry concessions are of importance to local communities: revenue-sharing and social agreements.

Revenue-sharing

All forest resources in Liberia, regardless of land ownership, are held in trust by the Republic, represented by the FDA, for the benefit of the people, except those located in communal forests or which have been developed on private or deeded land through artificial regeneration. (NFRL, Section 2.1). Land rental paid on forest concessions accrues to the national government but is earmarked for apportioning among counties (30 percent), affected communities (30 percent) and the national government (40 percent) (NFRL, Section 14.2 and FDA regulation 106–07). These arrangements may be subject to review in the context of a proposed Land Commission that will inter alia make recommendations on the decentralization of public functions.

There are a number of potential risks arising with the arrangements: (1) There is ambiguity whether the area fee bid premium arising from the concession auctions will be included in the total to be distributed, as the bid premium is not listed as a land rental fee (FDA regulation 107-07) and is described therein as separate and additional. The NFRL Section 14.2 is also unclear, but appears to lean toward inclusion. The issue is important because the bid premium is likely to significantly exceed the basic land rental alone; (2) that bid premium is payable recurrently every year raised the possibility of default by concession holders, exposing communities and counties to potential revenue risk; (3) distribution mechanisms for community sharing of land rentals are being hurriedly put in place in time to provide visible benefits when logging commences, but experience in other countries with similar arrangement is that the flow of funds from the central government to communities can be slow; and (4) the arrangement will need to be renegotiated if the fiscal terms in forest concessions are reformed.

The danger here is that the mechanism could lose credibility if timely and effective implementation is not ensured. Part of the problem arises from the decision to earmark a share of a particular flow of revenue collection. The program would be more effective and potentially more responsive to community and county needs if flows depended mainly on community needs and were financed out of general revenue.

Social agreements

Traditionally, timber concession holders have negotiated and financed a compensatory package for local communities affected by their operations, usually by providing infrastructure or amenities or specific inducements to traditional leaders; this has been considered a vital element in establishing acceptance of logging operations among local communities. The idea of a formal social agreement has been introduced and incorporated into Liberian law through NFRL Section 5 and FDA regulation 105-07. Guidance on their implementation is provided in the Social Agreements Handbook (2008).19

A minimum financial benefit for communities under a social contract is defined in FDA regulation 105-07 as US$1 per cubic meter of logs harvested annually by the concession holder. However, in the Social Agreement Handbook, the FDA has capped this amount at US$1 and US$1 ½ per cubic meter for TSCs and FMCs, respectively. The regulation requires that the payments be made on a quarterly basis into an escrow account, to be accessed by community Forestry Development Committees. Since logging contracts have only just been signed for the initial batch of TSCs, there are not yet any social agreements in existence.

Conclusions

Forestry reform has greatly simplified the fiscal terms for the industry, and further improvements are feasible. The legislation and regulations now provide for stumpage fees (varying with species quality), and for export taxes. The bidding variable in auctions is the area rental. There is

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19 The idea of a formal social agreement appears to have been borrowed from Ghana, which introduced similar social responsibility agreements under its Timber Resources Management Act (1997).
limited experience with auctions so far, but there may be scope to consider improved auction design and a change of bid variable—the stumpage fee instead of the area rental—in order to capture more of the rent while, at the same time, improving the risk profile for investors. Clear rules are needed for treatment of natural forest on agricultural concessions, and of planted timber (e.g., rubber wood). Forestry payments are to be included in the Liberia Extractive Industries Transparency Initiative (LEITI). Port fees raise special concerns for forestry exports.

The export tax incentive for further processing of timber carries risks, and may not be cost effective. Export tax is halved for processed timber, but the tax is levied on the value of the wood product, not the log. This discriminates against high-value processing, while at the same time posing risks for sustainable forest management if overcapacity develops in low-value processing. It would be worthwhile to consolidate the export tax into the stumpage fee, and rely on general manufacturing and processing incentives to provide attractive fiscal terms for processing.

A reform agenda for the forestry sector in Liberia should take into account the following measures:

• Remove the export tax, and make up the revenue through increase in the stumpage tax rates.

• Forest taxes should be charged on harvested natural trees on agricultural concessions, but not on harvest of trees planted for agricultural purposes (for example, rubber wood) by the concessionaire.

• Consider revising the auction format to require participants to submit bids on the stumpage fee percentage they are prepared to pay, to share risk better and increase revenue.

• To improve the level of competition in the auction process and enhance rent capture, consider changes in the auction design in light of experience and best practices in forestry and other natural resources, including moving to a two-stage Anglo-Dutch auction.

• Consider introducing into concession agreements a forestry economic rent tax, at a modest rate, to capture a larger share of the rents from the most profitable projects.

• A strategy for the promotion of value added wood product investments could be focused on using the general fiscal incentives of the LRC, and not direct or indirect subsidization of the log input, or through other measures targeted specifically at log processing. Export taxes should not be used for this purpose.

THE SITUATION OF GABON

After several years of almost unregulated exploitation of its forest, Gabon in 2001 initiated comprehensive reforms directed toward sustainable management of its forestry resources. Three important measures were implemented that defined the institutional and legal frameworks and the vision of reform aimed at ensuring the protection and sustainable use of the forests: (1) in 2001 a new Forestry Code was approved. The objectives of the Code are to place forests under sustainable management plans; 20 establish a taxation system that will stimulate sustainable management of the forests, and consolidate a local processing industry; (2) in 2002 Gabon created a system of 13 national parks. The parks occupy 3 million hectares—about 10.6 percent of the country’s area; and (3) in 2004 Gabon approved a letter of development of the forestry sector. The letter, prepared in consultation with the World Bank, lays out an agenda for reform and specifies measures to remove obstacles to achieving sustainable management.

Forestry Taxation

Though the objectives of the reform have been formulated and Gabon has made substantial progress in only few years, substantial challenges need to be addressed to move the reforms forward.

Tax revenue from forests in recent years has represented less than 1 percent of GDP and only about 7 percent of total tax revenues. 21 Until recently, the taxation system was cumbersome: at least 20 different taxes and fees burdened sector activities, particularly exports. Moreover, a timber marketing board (SNBG) had a monopoly on the exportation of Okoumé and Ozigo logs, and charged a fee on these exports to finance its operations. After lengthy negotiations between the government and forestry companies, in 2004 a reform reduced the taxes to three:

• An area tax based on the size of the concession. Previously tax rates differed by zone: Zone A: FCFA 20 per hectare; Zone B: FCFA 12; Zone C: FCFA 8; and Zone D: FCFA 4. The new tax is based only on the size of the concession; the rate is FCFA 600 per hectare. This tax exempts the special and family permits. A temporary provision allows concessions under sustainable management plans to reduce the tax obligation by 50 percent.

• A stumpage tax based on the value of the log. The rate varies from 2.6 percent to 7.7 according to where the tree is located to reflect costs associated with difficulties in exploitation. The incentive is to reduce waste and to facilitate valuation of the real cost of the activity. The tax exempts special permits and the family exploitation, and differentiates between logs for exports (the tax base is calculated after subtracting 15 percent of the price of the log) and for domestic processing (the tax base is calculated after subtracting 60 percent of the price of the log).

20 A management plan is a planning program for an area, usually with a horizon of at least 20 years. It sets a pace of felling to keep the resource sustainable and incorporates an inventory of the stock, a zoning map defining principal roads and areas for annual felling, the duration of the rotation, and a list of the exploitation units.

21 Forestry tax arrears during 2004-07 are about CFAF 10.7 billion for the area tax and 7.4 billion for the stumpage tax. The government is taking measures to accelerate the rate of recovery of tax arrears, among them introducing retention rates.
• An export tax of 17 percent on logs: the rate was lowered from the 2002 level of 20 percent. Processed exports are exempted.

The yield of Gabon’s forestry taxes has been lower than in other countries in the region. In Cameroon, for example, which produces only about 65 percent as much forestry products as Gabon, forestry taxes in 2003 brought about CFAF 40 billion, compared with CFAF 33 billion for Gabon. Before further reforms in the tax structure are undertaken, going to other rounds of tax design, it would appear to be important to consolidate revenues by strengthening control mechanisms and collecting tax arrears.

It is not feasible in the short run to substitute the stumpage and area taxes for the export tax. A gradual phasing out of the export tax on logs has been recommended because the tax distorts incentives, penalizing exports in favor of domestic processing. However, the stumpage tax revenue is still far off its original target of about CFAF 7 to 8 billion annually, and even farther from full replacement of the export tax, which has an expected yield of about CFAF 25 billion annually over 2003-06. Exemptions from the stumpage tax also introduce distortions and lowers collections, making it difficult to phase out the export tax. For instance, even if the same base is applied to both taxes, the revenues would differ, because: (1) the rate of the export tax is 17 percent and the rate of the stumpage tax varies from 3 percent to 9; (2) the stumpage tax does not apply to family permits and special permits while the export tax does; and (3) the export tax is applied to the full value of the log, while the stumpage tax exempts 15 percent of the full value if the log is exported, and 60 percent if it is processed domestically.

**Sustainable management and concessions**

The new Forestry Code differentiates forests by rural and permanent domain. The rural domain comprises community and other forests for use by municipalities. Community forests can be commercially exploited. Though the law establishes simplified mandatory management plans for them, in practice it has not been enforced, and a preferential treatment has been granted, exempting certain permit holders from paying stumpage and other taxes.

The permanent domain of the state comprises all the areas that are subject to mandatory management plans. Though the forestry code established the end of 2005 as a deadline for adopting management plans, as of May 2010 less than 50 percent of the permanent domain is under forestry management plans. The areas subject to management plan are protected areas including recreational areas, where no exploitation is allowed, and the productive areas where most of the logging takes place. There are three types of productive areas:

22 Only the big companies, which are mainly foreign-owned, have adopted management plans. These include, Compagnie Equatoriale de Gabon (CEB) Thanry, SBL, Rougier Gabon, Leroy Gabon, and SHM.

23 It includes the system of 13 national parks.

• Big forestry concessions under sustainable management (Concession forestière sous aménagement durable, CFAD). The size of concessions range from 50 000 to 200 000 hectares; no owner may hold more than 600 000 hectares. These concessions are also associated with processing units. The concession may be granted to foreign investors as long as they submit an acceptable management plan.

• Medium-size concessions or associated forestry permits (Permis forestier associé, PFA), which are granted exclusively to nationals. A PFA must be associated to a CFAD; the maximum area of 15 000 ha can be extended to 50 000 ha if a management plan is submitted.

• Good faith permits (gré a gré), which are granted only to nationals and are managed by the government. The area is measured in feet rather than hectares. Owners of these permits must sell their production domestically to a processing industry.

The main problem has been the appropriate allocation of the permits. When the letter of development policy was being prepared the World Bank advocated (1) a moratorium in the allocation of the gré a gré permits until a transparent mechanism is in place (the moratorium was decreed on October 9, 2004); (2) making public information about the holders of the permits (since February 2005 they have been listed on the web page of the Ministry of Economy and Finance); (3) a system of auctions to allocate concessions.

**The timber marketing board**

The government decided in December 2004 to eliminate the monopoly of the timber marketing board (SNBG) in commercializing Okoumé and Ozigo. The decree established a period of transition in which the SNBG would downsize its operations and transform itself into an institution undertaking surveillance and control of the forestry sector. Because the decision abolished fees on exports amounting to about 10 percent of the sale prices, forestry activity would be expected to increase. Companies are not compelled to export anymore through the SNBG. In the initial period after the reform, however, the SNBG did not downsize its operations and became an active actor in the domestic trading and exporting of timber, which was contrary to the spirit of the law.

**The bias toward domestic processing**

The Forestry Code states that the government aims to have 75 percent of total production processed domestically by 2012. This is not a new idea: over the years Gabon has planned to build a domestic processing industry. However, when the Forestry Code was approved, the government not only restated that intention, it also offered fiscal incentives

24 The government had 51 percent participation and the rest was owned by several producers.
for processing. Those incentives include exemption from the stumpage tax of 60 percent of the price of the log, full exemption of the export tax, devolution of the value-added tax paid on inputs for processed exports, and a requirement that certain permits for forestry production be associated with domestic processing units.

The new requirements have indeed increased domestic processing, but have also generated at least three costs: (1) a revenue loss for the government; (2) a bias against the export of logs; and (3) efficiency losses in the economy because some new enterprises could not be competitive.25

CONCLUSIONS

A reform agenda in the forestry sector should be based on the following pillars:

- Improve Protection and sustainable exploitation of forests. To accomplish that it will be necessary, first, to consolidate the system of national parks and other protected areas and, second, to enforce the adoption of sustainable management plans in areas under exploitation.
- Strengthen the structure of taxation. The reforms initiated in some countries should be further advanced in order to remove distortions and increase tax revenues. The first stage should concentrate on the recovery of area and stumpage tax arrears and enforcement of payment of the stumpage tax particularly from logs used in domestic processing, but the second stage should be directed to phasing out the export tax and strengthening other sources of revenue. The stumpage tax should also be strengthened by eliminating exemptions for exports and domestic processing; unifying the rate at a higher level, eliminating exemptions for permits in the rural domain; and making tax administration more efficient. Other sources of revenues include area taxes or the possibility of profit taxes.
- Permits in the sector should be allocated by auction. As proved in some countries of the region, competitive bidding is the easiest way method to determine the proper rents. A system based on auctions would make information about the process public and guarantee that new permit holders adopt management plans.
- The government should avoid picking winners and losers in the forestry sector. Distortions as incentives to domestic processing should be avoided. The sector should compete the way other sectors in the economy do. The sector should be built up in terms of the general objective of diversifying the economy. Measures to benefit the sector are those that reduce transaction costs such as the elimination of the transport syndicate monopoly or elimination of surcharges like fee customs charges for accounting services. Fiscal incentives should be assessed in terms of their incentive to attract investment throughout the economy, such as accelerated depreciation under the corporate income tax.

REFERENCES


25 As a side indicator that there were competitiveness problems in the processing industry is that at the end of 2004 most of the nonperforming loans of commercial banks were originated in credits to wood transformation industries.