

Designing Fiscal Instruments for Sustainable Forests



This publication was commissioned by the Climate Investment Funds (CIF); however, the views expressed do not necessarily represent those of the CIF or the World Bank. While reasonable efforts have been made to ensure that the contents of this publication are factually correct, the CIF and the World Bank do not take responsibility for the accuracy or completeness of its contents and shall not be liable for loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this publication.

The chapters in this publication carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in these chapters are entirely those of the authors. They do not necessarily represent the views of the CIF, International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

© 2021 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

The material in this work is subject to copyright. Because the World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as proper attribution to this work is given.

Contents

4. Using fiscal incentives in fragile states ALAIN KARSENTY	113
BOX 4.1 Fiscal pathways to improved forest governance in the Democratic Republic of Congo THEODORE TREFON	114

4

Using Fiscal Incentives in Fragile States

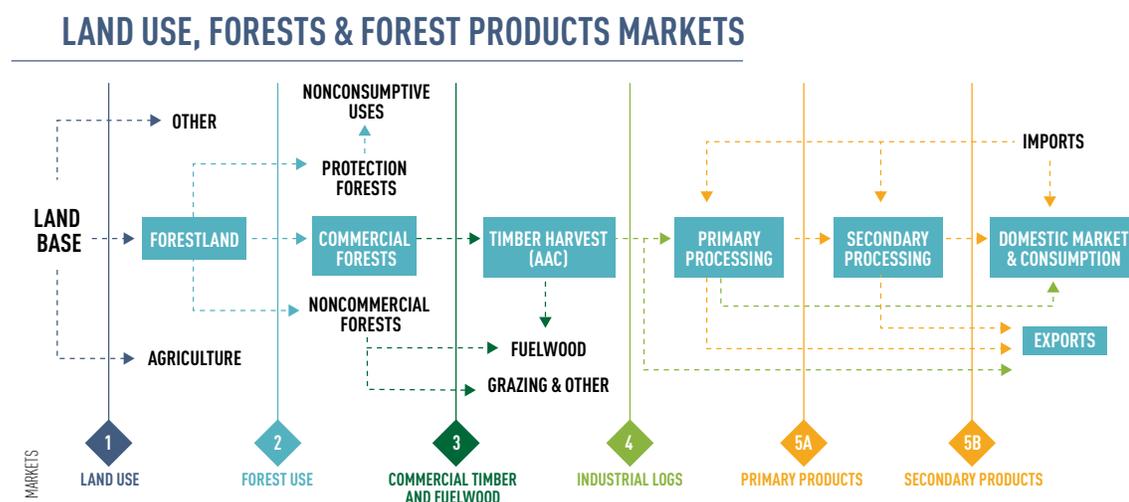
ALAIN KARSENTY

Introduction

It is possible to improve tax policy to raise incentives for the sustainable use of ecosystem resources and services, corresponding, among others, to the SDG 12 objective (“Responsible consumption and production”). In most developing countries, forest taxes are set either on forest area granted, on potential commercial volume, on effectively felled volume, on volume entering the mill (or on the output), or on volume sold on national or international markets. And as explained in chapter 3, alternative tax designs can produce stronger incentives for sustainable forestry.

However, fragile institutions and weak governmental capacity impact the effectiveness of such systems. Therefore, the design of tax policies and ambition levels need to be adapted to the governance capacity of countries. This chapter investigates options for the use of environmental tax policy in fragile states, focusing on specific stages of the forest value chain (shaded boxes in figure 4.1).

FIGURE 4.1
MAIN ELEMENTS OF THE FOREST VALUE CHAIN



Source: Adapted from Day 1998.

Second-Best Institutions Rather Than ‘Best Practices’

Fiscal instruments should be tailored to the governance context prevailing in different countries. As noticed by Rodrik (2008), “second-best institutions” are often better adapted for developing countries than “best practices” inspired by most developed countries. In this chapter, a comparison is made among what are generally featured as best practices in forest taxation and how these face serious hurdles in fragile states. Box 4.1 gives an example of the complexity of forest sector fiscal policy and its reform as well as notes some policy requisites and synergies for the Democratic Republic of Congo.

BOX 4.1 FISCAL PATHWAYS TO IMPROVED FOREST GOVERNANCE IN THE DEMOCRATIC REPUBLIC OF CONGO

THEODORE TREFON

The Democratic Republic of Congo’s forests offer tremendous potential for economic development and social well-being. They already provide subsistence and well-being to millions of ordinary Congolese—unlike industrial mining or oil resources, which mainly benefit national elites and foreign multinationals (Edmond and Titeca 2018; Garrett 2016). The IMF (2013) Congolese Poverty Reduction Strategy Paper emphasizes the economic contribution of forests for obvious reasons. But the country’s forests are vulnerable too and their longer-term sustainability is uncertain; some estimates suggest that these forests will be gone by 2100 (Tyukavina et al. 2018).

The Ministry of the Environment does not have the means to manage this natural heritage and consequently depends to a large extent on international partnerships. The potential of the Democratic Republic of Congo’s forest resources could be a catalyst for national development. This potential includes industrial harvesting of timber, payments for ecosystem services, and, most important, livelihoods for local populations (IMF 2013). The logical steps to take to capitalize on this potential are known and have been tested in the country and elsewhere, but the Democratic Republic of Congo’s long-awaited rendezvous with forest sector-led development has not been met. This can be explained by unrealistic policy design, governance challenges, and the role of the forestry sector within the broader political economy landscape.

The 2002 forest code and the October 2005 presidential decree laid the legal foundations for sustainable, socially and environmentally responsible management. These foundations include substantial requirements for public consultation and integration of social and environmental factors into the forest concession allocation process. In theory, this represents a significant improvement on past laws and practices. However, in practice, the probably too ambitious terms of the forest code are squeezing out of the sector those loggers who pay taxes or try to respect social clauses. The German Danger group, formerly one of the big actors on Congo’s industrial logging landscape, shut down its Democratic Republic of Congo operations in 2013 for this reason. Moreover, there is space to reform certain contradictory policies, for example, the forest code and the 2006 constitution concerning fiscal rights and responsibilities of the central government and the provinces (Global Witness 2012).

However, improved management of the forestry sector is at a standstill. This can be explained by the formal sector being overrun by artisanal timber harvesting for domestic use (building materials and fuelwood), challenges with law enforcement (and legality measures such as FLEGT), difficult relations with local populations who have unrealistic expectations (sometimes supported by foreign social and environmental watchdogs), and the expanding involvement of foreign companies.

The country’s cultural context helps account for why forest sector reform initiatives

have not achieved expected results.

Integrating this cultural dimension into the forest management agenda is a useful step in empowering communities so they can engage in the process. It is also useful because Congolese political actors sometimes operate in a world that is difficult for international experts to understand. The expectations of ordinary people are rarely considered because they are disassociated from debates about institutional reform. This disassociation results from the breach between foreign experts who interact with local elites and voiceless ordinary people.

As the Democratic Republic of Congo gradually starts to reinvent its governance performance (notably the application of the rule of law), fiscal policy design can be improved.

Other countries in the region have adopted successful policies to reduce deforestation that can serve as examples. Fiscal policies can help reduce deforestation in fragile low-income countries, but in the Democratic Republic of Congo concomitant progress in the democratic process needs to be made. The problem is the state's inability to collect taxes and, if they are collected, its inability to transfer the money into the appropriate government channels—not necessarily the absence of taxable revenues themselves. Tax legislation and regulations are inadequate with poor coordination by different collection agencies. Payment methods that are not transparent have prevented reliable disclosure of real tax amounts. Fiscal policies are necessary but insufficient to lead

to change alone. The slogan “No taxation without representation” can be extended to “No representation without taxation”; this will require significant behavior change in rentier economies like that of the Democratic Republic of Congo.

Pathways to improved fiscal policy to avoid forest degradation and deforestation include the following means:

- Training civil society organizations to monitor resource extraction along the lines of community policing
- Drawing lessons from the VAT put into place in 2011 and analyzing how mining and petroleum resources contributed
- Reinforcing the central government's revenue collection structures, mainly OFIDA (customs and excise tax), DGRAD (fees and commissions), DGI, and DGE (income tax)
- Respecting the requirements stipulated in the decentralization laws, notably the one regarding fiscal retrocession (Art. 175) to provinces from the central government

An integrated natural resource approach in the Democratic Republic of Congo is necessary to regain sovereignty and to better manage the natural resource base. Fiscal mechanisms are prerequisites for the implementation of this process. The concluding message of this contribution is, therefore, a call for the inclusion of appropriate fiscal policies within broader governance and state-building initiatives.

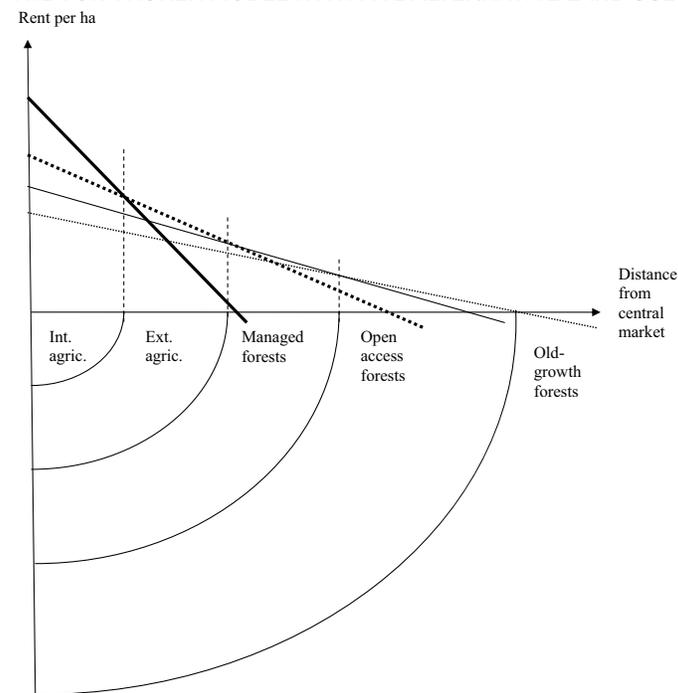
Fiscal Rationale of Forest Taxation: Capturing Economic Rent in Context of Limited Information

Forest taxes are used by governments in addition to corporate taxation to capture a greater share of revenues. Theoretically, the aim of forest taxes is to capture the “stumpage value” of a production forest, which can be assimilated to an economic rent (Gillis 1992). The stumpage value corresponds to the market price of the wood production (that is, a mix of logs, sawn wood, by-products, and finished products) minus the cost associated with logging, forest management, transport, processing, marketing, and a “normal” profit. Corporate taxation should also be deducted to get the stumpage value of a forest management unit. Forest taxation, therefore, can be viewed as a way of capturing the forest economic rent not collected by corporate taxation,

in a context of asymmetrical information between companies and governments about the prices and costs of timber operations.

Such information asymmetry is often specifically associated with tropical timber and fragile states. Species are often traded in small quantities on few markets, making the information on sales prices difficult to know. Relative prices are constantly evolving, not only among species but also between logs and processed products. In addition, companies can reduce their tax base, often through transfer pricing, but not only, and understaffed tax authorities frequently lag behind. Therefore, forest taxes play a critical role by collecting minimum revenues for the state, whether they capture some share of the economic rent (that is, profit in excess of “normal” return).

FIGURE 4.2
THE VON THÜNEN MODEL WITH FIVE ALTERNATIVE LAND USES



Source: Angelsen 2007.

Collecting revenues from productive forests is the first incentive for public authorities to keep the forest under its current use rather than encourage land conversion to agriculture.

Adopting a von Thünen perspective (which explains the localization of economic activities by the increasing transport costs to bring productions to markets), such a fiscal incentive can work around the “agricultural frontier” (see box 3.1). This frontier is the geographical point where potential net returns from agriculture or cattle (factoring in the cost of securing property rights) can compare with timber revenues (Hyde 2012). Figure 4.2 shows the agricultural frontier (solid line crossing the x-axis) proposed by Angelsen (2007). If one considers that the revenue of the state can be proportional to the revenue enjoyed by economic agents (through taxes on profits and/or land values), one can understand that, all other things being equal, a drop in fiscal receipts from forestry will encourage governments to allocate more forestland to agriculture, reducing its expenses for forest control and supervision.

The Uncertain Pigouvian Potential of Forest Taxes

What is the potential of forest taxes to internalize the negative external effects of timber production? This issue has been widely discussed in the last decades (Gillis 1992; Hyde and Sedjo 1992; Karsenty 2000, 2010; Leruth, Paris, and Ruzicka 2001; Vincent 1990) without a straightforward conclusion. As recalled by Leruth, Paris, and Ruzicka (2001), **traditional forest taxes cannot act as Pigouvian taxes since they are set not on negative externalities (for example, damages, wastes, and so on) but on area exploited or volume** (whether they are priced or not, that is, expressed in cubic meters only or in cubic meters and FOB prices) along the value chain.

It is theoretically possible to foresee taxes set on damages, but this could entail high costs.

For instance, one can imagine that, instead of taxing volume felled, taxes could be set on destroyed trees or area disturbed by logging and hauling operations. However, difficulties with such a scheme can be easily foreseen in the context of selective logging in tropical areas. Since satellite imagery is only gradually becoming precise enough (to distinguish what is attributable to logging and roads, and what is attributable to, say, shifting cultivation or fires) and not yet available in real time, such a survey would still require expensive field surveys, with corruption risks if such surveys are made by forest officers.

Yet forest services in fragile states lack financial means to monitor forest operations and estimate the level of damages on an objective basis. The same would apply for, say, carbon emissions or biodiversity losses. In addition, damages are not the same for each negative externality: For instance, damage from road compaction might be more critical than damage to forest regeneration. Damages to canopy cover can be also critical, but the right thresholds are difficult to set: Light-demanding species need more opening than shade-tolerant ones, and it also depends on the dynamics of pioneering species.

Area taxation is a good example of the uncertain Pigouvian effect of forest taxes. Area taxes are easy to collect (as area information is readily available); however, the effect of the level of area fee on loggers' behavior will depend on many other contextual factors. On the one hand, one can expect that an increase of area fees will encourage logging intensification (that is, more volume harvested per surface unit, less abandoned). Logging intensification can be a desirable outcome in certain conditions (for example, when regeneration of light-demanding commercial species requires more canopy opening), but it can also have adverse effects, especially if management plans are not strictly enforced. In addition, positive outcomes (for example, using more volume per hectare in order to "consume" less space) depend on the capacity to find profitable enough outputs for lesser-known timber species and industrial capacity (and outlets) to valorize timber with defaults.

Some researchers have even pointed out the risk of short-term-oriented behavior associated with higher area fees ("rush throughout the concession"), suggesting loggers would not respect the felling cycles and would seek to abandon the concession as early as they can, to stop paying high area fees (Vincent, Gibson, and Boscolo 2003). Admittedly, this depends on the degree of enforcement of forest regulations, and it is a mono-causal explanation of loggers' behavior that does not explain why loggers in Southeast Asia exploited their forests so rapidly, sometimes conducting their operations at night. However, in countries with limited enforcement of the regulatory framework, this effect is not unlikely.

Felling taxes can modify incentives as there is room to modulate tax rates according to the promotion objective of some species (for example, diminution of high-grading or hyper-selective harvests). However, not all lesser-known timber species are resilient to an increasing harvest pressure, and such incentives should be granted after careful analysis of forest inventories and scientific studies related to regeneration capacity. In any case, the Pigouvian potential of different felling tax rates is quite limited when transport costs are high and market prices of targeted lesser-known timber species are not high enough to ensure profitability.

In general, it is considered that moving forest taxes from downstream to upstream stages of the value chain favors efficiency. Following such a principle, in 2000, World Bank consultants proposed that the government of Cameroon move the tax on processed products from the output

to the volume of logs entering the mills, with the objective to encourage an optimal use of the raw material. This change was implemented for almost a decade, but tax collection rapidly declined as the controllers posted at the entry of the (numerous) mills became “captured” by companies and neglected to report certain volumes (or did not declare the right species). Eventually, this solution was abandoned, and taxes are mainly collected at the export chokepoint. This example illustrates the difficulties of implementing theoretically satisfying solutions in fragile states.

One way to move taxes upstream is by using a bidding procedure (that is, auctions) for allocating forest permits. Such a procedure has been suggested to fulfill two other policy objectives: (i) Increase tax collection through better economic rent capture using competition between companies for securing their access to the resource; and (ii) counter discretionary allocation of permits through the comparison of proposals and, possibly, the publicity of the allocation procedure.

However, forestry ministries tend to favor “technical criteria” over financial ones, overestimating their capacity to monitor the fulfillment of commitments once the permit has been attributed (thus making eventual sanctions unlikely). In Cameroon, where an auction system jointly designed and revised with the World Bank has been implemented since 1997, the coexistence of technical and financial offers has favored corruption (Topa et al. 2009). Even though the financial offer was given the most weight (at 70 percent) in the result, the eliminatory threshold associated with the technical offer sometimes led to suspect elimination of certain competitors, which benefited other competitors. Up-front transmission of information on the bids to some competitors (sent in advance by bidders to the commission under sealed envelopes) has also been suspected to have distorted competitive conditions on some occasions (Karsenty and Fournier 2008). Real-time auctions would mitigate such risk of information leakage, but it has not been attempted for concession allocation in the forestry sector.

The auctioning of forest permits is generally strongly opposed by insiders from the private sector. In Cameroon, the auction system has demonstrated the potential to collect a greater part of the economic rent and revealed in several circumstances the true willingness to pay (Topa et al. 2009), but duplication of the mechanism in other countries did not happen. Insiders prefer discretionary allocation. Companies equally fear that competition leads to overbidding and the “winner’s curse.”

An annual area fee set through auctioning is a fixed cost, while timber prices (and other costs) vary over time. This potentially creates a risk for the forestry industry, which is a long-term activity. The risk of price variation can be mitigated if the annual fee set through the auction process is indexed to a composite price index reflecting the variation of the market price of various timber species, and products (logs, sawn wood, plywood, and so on). The International Tropical Timber Organization (ITTO) publishes a bimonthly list of prices; however, the list is not exhaustive and the accuracy is disputed. Nevertheless, it reflects FOB price change trends for various regions. Reinforcing this information service would perhaps convince new governments to experiment with auction mechanisms for allocating forest permits without placing all the risk on the industry.

In Africa, where foreign companies tend to dominate the industrial value chain, national loggers fiercely oppose the auction system, which was considered to favor powerful economic actors. In Cameroon, for some years, certain allocation rounds have been reserved for nationals. However, it turned out that some local concessionaires winning the auction were simply straw men of hidden foreign operators.

From Performance Bonds to ‘Feebates’ Associated with Certification

Acknowledging the limited potential for using traditional forest taxes as incentives, analysts in the 1990s proposed a “performance bond” mechanism. The idea was to force loggers to make, before starting operations, a cash deposit that would be refunded according to the quality of work assessed ex-post on the degraded areas (Blakeney 1993). Karsenty (2000) proposed to accentuate the incentive dimension of the mechanism through the setting of national funds supplemented by international transfers, allowing reimbursements of the deposits with subsidized interest payments for good performances. However, such ideas stumbled over the obstacle of institutional arrangements needed to combine government involvement and independent monitoring of forest performance. In addition, to become an incentive, the deposit should be substantial, which would tend to favor large-scale companies at the expense of national companies and small and medium enterprises. In Cameroon, a financial deposit (guarantee) has been in force for years (Topa et al. 2009), but concessionaires do not trust the government to refund them at the end of the contract and have simply factored in this cost in their up-front expenses.

The rise of independent forest certification schemes, in particular the Forest Stewardship Council, has led to a reframing of the performance bond idea through combining three economic instruments: taxes, certification, and performance-based incentives. The new approach relies on private governance (forest management certification) to assess the performance of forestry companies against ecological and social production standards. In situations where the public sector is not able to raise information or adequately control production methods, goods can be taxed on the assumption that they are not sustainable unless it is shown that sustainable production methods have been followed (Heine et al. 2014), for example, using international sustainability certification companies. Karsenty (2010, 2016) suggested a mechanism of forest tax reductions for certified concessions with full compensation of foregone revenues to public treasuries through bilateral agreements—for a bounded period to be negotiated between donors and national governments. If achieving this transition in fragile producer states is too difficult, the producers can nevertheless be made to face price incentives for sustainability if consumer countries reduce the rates of their consumption taxes for certified imported timber commodities (Heine, Faure, and Lan 2017). Relatedly, Trachtman (2017) suggested that taxing the consumption of goods for their environmental damages and providing exemptions for sustainably produced goods is likely compatible with trade law. And Böhringer, Rosendahl, and Storrøsten (2017) provided a general equilibrium model showing strong effectiveness of a combination of taxes with output-based rebate for sustainable production. These proposals are taken up in chapters 6 and 7 of this volume.

The issues of transparency and a level playing field in fragile states are significant obstacles to implementing such a mechanism beyond the issue of willingness to pay from donors’ side.

Some FSC-certified companies operating in Africa, for instance, have been reluctant toward such a scheme inasmuch as they do not pay the nominal taxes even in the absence of any rule-based tax discount schemes, thanks to tax concessions they receive in return for various services they provide to public institutions (road maintenance, industrial investment in some places, and so on). Most of the time, such arrangements are not illegal, but they derogate from the common fiscal regulations. Significantly, these companies are opposed to disclosing the amount of taxes they annually pay. Officially, it is to avoid communicating strategic business information to competitors; another motivation may be to avoid making public discreet bilateral arrangements with various authorities.

The potential mandating of forest management certification in some countries could also be an obstacle to using feebates. The 2018 announcement in Gabon of mandatory FSC certification by 2020 of all concessions will possibly be followed by a similar provision in the forestry law under preparation in the Republic of Congo. If the obligation to certify is enforced, and all products carry the same certificate, feebates will no longer be able to affect the relative prices of products produced with more stringent production standards. In this case, fragile countries will effectively just outsource certain law enforcement functions to certification companies, which could be a solution to overcome public governance with private governance. Certification companies are accountable to international oversight because they face a strong disincentive to shirk in one market and risk negative spillovers to their business in another market. Furthermore, their global brands provide an easy target for consumers and nongovernmental organizations in case of any wrongdoing. However, notwithstanding these advantages of using certification companies to supplement weak public governance, there are also problems in the delegation of government tasks to unelected private bodies. Even where the government uses private governance as an enforcement mechanism, it needs to retain its role in public oversight, and this can be difficult in fragile states.

Measures to assure the independence of the certification process may be needed in fragile states. Governance problems do not arise for states only—the fragility of the host state can also affect effective governance of the certification systems themselves. One of the main criticisms leveled at certification is the selection and the remuneration of the certifying body by the audited company itself, which can lead to “biased selection” and potential complacency of the for-profit certifying body. Earmarking a fraction of the forest taxes for a fund (that would directly remunerate the certifying body in lieu of the company itself) can diminish the commercial dependence of the former vis-à-vis its client. In addition, it would organize a financial transfer from noncertified companies to certified ones, since all of them could contribute to the funding through taxation (pooling). If governments were reluctant to “sacrifice” or to earmark fiscal receipts, donors could directly finance and manage such a fund. This financing structure would not, however, resolve the issue of selection of certifying bodies by the companies. Feebates may be able to address this concern by granting different sizes of tax discounts for certificates of different stringency (see chapters 6 and 7), but this solution also complicates tax policy.

Conclusion

In fragile states with weak institutions and rampant corruption, the potential to use traditional forest taxes as Pigouvian taxes should not be overestimated. First, governments perceive natural resources taxation, including forestry, for the primary objective of collecting revenues (and economic rents if there are some to be had) in a context of asymmetry of information regarding the real profits enjoyed by companies, limiting the potential of corporate taxation. Unless governments of fragile states receive additional international financing for change, it is politically unlikely that they would change their priorities and give a prominent place to Pigouvian taxes in their forest fiscal system. This constraint raises the question of whether donors, perceiving the opportunities of improving the conservation incentives from forestry taxes, will be prepared to financially support such reforms in developing countries, similar to how they are already providing such financing for expenditure policies like REDD+. Second, administering the taxation of negative externalities (notably ecological damages) could be costly unless fragile states have access to the needed systems for raising this information, which would necessitate

precise field surveys, probably in combination with remote sensing systems, or the information from private forest certification systems.

The extension of independent forest certification, however, provides an opportunity to revisit the principle of “performance bonds” conceived in the 1990s but never implemented because of the difficulty of agreeing upon criteria of performances and the limited capacity of forest services in developing countries to implement such a scheme. If donors join forces, using tax rebates as an incentive for becoming and remaining certified (if certification remains a voluntary scheme), and pooling the costs of audits, seems to be a promising avenue. Such a mechanism could provide transparency, and a much-leveled playing field among companies vis-à-vis tax exemptions will help progress toward the rule of law. In that way, such a scheme would also be an instrument for better governance, as auctioning area fees has been used (for example, in Cameroon) for publicizing the allocation process and to contain opportunities for corruption.

However, tax instruments are not silver bullets for promoting SFM or avoiding deforestation, especially if other sectoral policies, including fiscal ones, favor forest conversion. In particular, in countries where illegal logging activities, often associated with informal small-scale producers, are widespread, increases in taxation levels (which could be a prerequisite for using feebates unless there is international co-financing) are likely to lead to more illegality if there is no complementary policy implemented to tackle this issue.

Well-designed fiscal policies can be good auxiliaries for implementing coherent public policies aiming at containing deforestation, provided they are embedded in an appropriate mix of economic and regulatory instruments.

References

- Angelsen, A. 2007. "Forest Cover Change in Space and Time: Combining the von Thünen and Forest Transition Theories." Policy Research Working Paper 4117, World Bank, Washington, DC.
- Blakeney, J. 1993. "Performance Deposit: An Incentive for Sustainable Forest Management." In *Forestry Management for Sustainable Development*, EDI Policy Seminar Report 32, ed. E. D'Silva and S. Appanah, 14. Washington, DC: World Bank.
- Böhringer, C., K. Rosendahl, and H. Storrøsten. 2017. "Robust Policies to Mitigate Carbon Leakage." *Journal of Public Economics* 149 (May): 35–46.
- Day, B. 1998. "Who's Collecting the Rent? Taxation and Superprofits in the Forest Sector." Draft report to the Environmental Department, World Bank, Washington, DC.
- Edmond, P., and K. Titeca. 2018. "Chicken Now, not Eggs Later: Short-Termism, Underdevelopment and Regime Stabilization in the DRC's Oil Governance." IOB Discussion Paper, University of Antwerp, Belgium.
- Gillis, M. 1992. "Forest Concession Management and Revenue Policies." In *Managing the World's Forests*, ed. N. P. Sharma. Dubuque: Kendall/Hunt.
- Global Witness. 2012. "DRC: Analysis." [http://www.foresttransparency.info/drc/news/818/drc-analysis/%3Ch2%3EAccess to information%3C/h2%3E%3Cp%3E](http://www.foresttransparency.info/drc/news/818/drc-analysis/%3Ch2%3EAccess%3C/h2%3E%3Cp%3E).
- Garrett, N. 2016. "Taming Predatory Elites in the Democratic Republic of the Congo: Regulating Property Rights to Adjust Incentives and Improve Economic Performance in the Mining Sector." In *Governance, Natural Resources and Post-Conflict Peacebuilding*, ed. C. Bruch, C. Muffett, and S. S. Nichols, 363–386. Volume 2. New York: Routledge.
- Heine, D., M. G. Faure, and C.-C. Lan. 2017. "Augmenting Forest Sustainability Certificates With Fiscal Instruments." RILE Working Paper 2015/7, Rotterdam Institute of Law and Economics, Netherlands.
- Heine, D., S. Gäde, G. Dominiononi, and B. Martínez Romera. 2014. "Unilaterally Removing Indirect Subsidies for Maritime Fuel." RILE Working Paper 2014/6, Rotterdam Institute of Law and Economics, Netherlands.
- Hyde, W. F. 2012. *The Global Economics of Forestry*. New York: Taylor and Francis.
- Hyde, W. F., and R. A. Sedjo. 1992. "Managing Tropical Forests: Reflections on the Rent Distribution Discussion." *Land Economics* 68 (3): 343–350.
- IMF (International Monetary Fund). 2013. "Democratic Republic of the Congo: Poverty Reduction Strategy Paper." International Monetary Fund, Washington, DC.
- Karsenty, A. 2000. *Economic Instruments for Tropical Forests: The Congo Basin Case*. London.
- Karsenty, A. 2010. "Forest Taxation Regime for Tropical Forests: Lessons From Central Africa." *International Forestry Review* 12 (2): 121–128.

Karsenty, A. 2016. "The Contemporary Forest Concessions in West and Central Africa: Chronicle of a Foretold Decline?" Forestry Policy and Institutions Working Paper 34, Food and Agriculture Organization, Rome.

Karsenty, A., and P. Fournier. 2008. "États 'défaillants': Le secteur forestier en Afrique centrale." *Mondes en Développement* 36 (143): 43–56.

Leruth, L., R. Paris, and I. Ruzicka. 2001. "The Complier Pays Principle: The Limits of Fiscal Approaches Toward Sustainable Forest Management." *IMF Staff Papers* 48 (2): 397–423.

Rodrik, D. 2008. "Second-Best Institutions." *American Economic Review* 98 (2): 100–104.

Topa, G., A. Karsenty, C. Megevand, and L. Debroux. 2009. *The Rainforests of Cameroon: Experience and Evidence From a Decade of Reform*. Directions in Development: Environment and Sustainable Development. Washington, DC: World Bank.

Trachtman, J. 2017. "Law Constraints on Border Tax Adjustment and Tax Credit Mechanisms to Reduce the Competitive Effects of Carbon Taxes." *National Tax Journal* 70 (2): 469–494.

Tyukavina, A., M. C. Hansen, P. Potapov, D. Parker, C. Okpa, S. V. Stehman, I. Kommareddy, and S. Turubanova. 2018. "Congo Basin Forest Loss Dominated by Increasing Smallholder Clearing." *Science Advances* 4 (11).

Vincent, J. R. 1990. "Rent Capture and the Feasibility of Tropical Forest Management." *Land Economics* 6 (2): 212–223.

Vincent, J. R., C. Gibson, and M. Boscolo. 2003. "The Politics and Economics of Forest Reforms in Cameroon." World Bank, Washington, DC.