

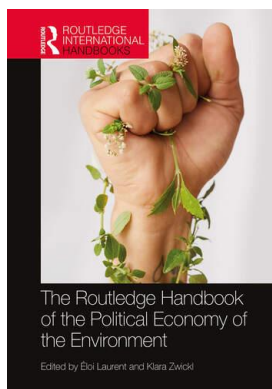
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POLITICAL ECONOMY OF FOREST PROTECTION

Alain Karsenty

Introduction

Conserving forests by halting deforestation and reducing their degradation has become one of the major global issues of the 21st century, given the importance of forest ecosystems for climate change, biodiversity conservation and human well-being. While initially seen as a technical issue devoted to forestry experts, the discourse was extended to other stakeholders as it became increasingly evident that collective choices and governance issues have to be addressed as a priority. Far from being mere technical exercises, simply defining what a forest is and measuring deforestation turned out to be full of political stakes and geopolitical implications. After the “mega-fires” that hit the Amazon and other forests throughout the world in 2019, the call to grant large tropical forests a “global common goods” status was formulated by prominent Western figures, sparking fierce nationalist reactions from Southern politicians who recalled the ecological debt contracted by industrialized countries.

Several major international initiatives have emerged over the past 20 years to try to curb deforestation and forest degradation. Independent certification came first from the world of the NGOs. Certification has become an institution, in the sociological sense of an established social form, and is no longer exclusively an instrument of private governance, as some governments have decided to use it in their public policies. Another initiative came from industrial countries, with public regulations criminalizing imports of illegally cut timber and proposals for bilateral trade partnerships with producing countries in order to “certify the country” (Karsenty 2019). In the meantime, a number of agribusiness firms, followed by governments, have focused on voluntary approaches to remove deforestation from commodity supply chains. Some Western governments have designed national strategies against “imported deforestation” embedded in agricultural product imports.

The best-known initiative, Reducing Emissions from Deforestation and forest Degradation (REDD+), came from an alliance of researchers, economists and NGOs based on a proposal to remunerate countries for conserving their forests. This proposal, formulated in a context of climate change negotiations and the development of carbon markets, reflects the influence of the economic framing of the deforestation issue (conservation of forests is an issue of opportunity cost), the attraction for results-based payments as an effective management tool to deliver international transfers, and the trust in economic incentives for transforming public governance.

So far, none of these initiatives has succeeded in curbing deforestation and the conversion of natural ecosystems to artificialized areas, either for food, urban settlements or energy crops. Diagnoses of the “forest crisis” are generally correct, but they often overlook major political economy issues, such as the fact that governments are not benevolent institutions acting for the common welfare of their people and that urban elites have little interest in the fate of forest-dependent people, who are not that numerous and often voiceless. More importantly, endeavours to tackle the forest crisis without questioning the unabated global demand for biomass, energy and agricultural land, and the rules of international trade, seem illusory. The same can be said about population growth: this major underlying cause of ecosystem conversion has long been occulted from international organizations’ statements and was, until recently, not popular in academic circles, as pointing out the issue was assimilated to an attempt to curtail “the right to develop” of Southern countries.

This chapter will attempt to take stock of some of the most prominent international initiatives taken and instruments adopted over the last two decades for reducing deforestation and conserving forests, and their ambition and limitations will be examined from a political economy perspective.

The first part of the chapter analyzes the stakes involved in qualifying forest, deforestation and its causes. In this section, an attempt will also be made to clarify the discussion about the hypothetical “global public goods” nature of the world’s forests and provide some considerations about the potential of “local commons”, often institutionalized as community forests.

The second part of the chapter analyzes forest-related market-based instruments, designed to provide incentives to stakeholders for changing their practices or policies. Certifications and corporate voluntary commitments for sustainable forest management or deforestation-free agricultural production are coexisting with attempts by Western governments to ban illegal timber and “imported deforestation” from international trade. Lastly, the most ambitious initiative, REDD+, which aims to create an international regime of results-based payments, illustrates how a well-intentioned but short-sighted mechanism is likely to generate perverse incentives and favours strategic behaviours of rent-seeking governments.

In the third and last part of the chapter, an attempt is made to propose a rethink of results-based payments, since the principle has become the cornerstone of the international discourse on environmental protection. Effective results-based payments must give priority to investment and a joint agenda merging food security and forest protection. Finally, modifying consumption patterns and changing the rules of international trade are necessary crossing points for resolving the forest crisis.

Part I: Forest, deforestation and its causes

Political economy of defining forests and deforestation

The critical ecological role of forests

“Trees: they can save us.” This was the front page headline of a popular French science magazine in 2019.¹ This statement testifies to the place held by forests in the imagination of the climate crisis. While deforestation, which accounts for the vast majority of land use changes, accounts for 14% of annual anthropogenic CO₂ emissions, terrestrial ecosystems, including forests, account for 29% of total human-made emissions (Global Carbon Project 2019). The reservoir they represent is immense, since forests store more than half of the carbon in the world’s land (1,120 GtC). Thus, as the climate issue occupies a growing place on the international relations

agenda, the fate of forests has become a political issue in its own right. The forest fires in the summer of 2019 in the Amazon and the controversies with the Bolsonaro government, accused of “letting the planet’s lung be destroyed”, demonstrate this.

Beyond their importance in the carbon cycle, forests are estimated to support 80% of the world’s terrestrial biodiversity, and two-thirds of it is found in natural tropical forests. As for the global water cycle, the role of forests has been refined. Not only do large forests, such as the Amazon, make their own rain through tree transpiration (Staal et al. 2018), but the long-distance transportation of moisture through “rivers in the sky” gives rise to rainfall thousands of kilometres away (Ellison et al. 2017).

Role in human well-being

Forests also contribute to human well-being in several ways. Timber and wood-energy activities provide millions of jobs. According to the Food and Agriculture Organization of the United Nations (FAO 2014), in employment terms the formal sector provided 13.2 million jobs, while an estimated 41 million livelihoods were dependent on the informal sector. The FAO report also outlined the importance of forest contributions to food and nutrition security. About 11 kg of edible non-wood forest products were consumed per capita globally.

It is also estimated that a third of the world’s population depends on woodfuel for cooking, while 764 million people use woodfuel to boil drinking water. Herders in arid and semi-arid lands depend on trees as a source of fodder for their livestock. In this respect, forests provide a “safety net” for poor rural people.

Forests also contribute to clean water by protecting watersheds: three-quarters of the globe’s accessible fresh water comes from forested watersheds. Forests provide habitats for an estimated 80% of the world’s biodiversity.

The disruption of forested ecosystems causes a multiplication of interactions with humans. It thus creates new gateways for microorganisms. The destruction of primary forests not only reduces these benefits for people, but also creates contacts with animals that are potentially vectors of zoonoses. Deforestation and the artificialization of soils, by depriving many wild animals of food, are driving many species to move closer to inhabited centres. And the populations living near relatively wild areas hunt and – more or less legally – bring bushmeat into the cities, where it is coveted by city dwellers. In both cases, the viruses carried by these wild animals are close to a particularly fertile environment: the massive crop farms and livestock farms on the outskirts of many towns and cities.

Defining a forest

The FAO defines forests as land with trees capable of reaching a height of at least 5 metres at maturity, and whose cover occupies at least 10% of an area of more than half a hectare. Here, “forest” includes natural afforestation and forest plantations but excludes rows of trees established for agricultural production (such as fruit trees) and trees planted in agroforestry systems.

From there, FAO defines deforestation as the conversion of forest to a different land use or the long-term reduction of tree cover below the minimum 10% threshold (FAO 2012). Forests that are entirely cut down but intended for natural or artificial reforestation are not counted as deforestation. Neither are forests destroyed by fires when the land is intended to become forested again. In most cases, deforestation is the transition from an already degraded forest to an area for agriculture, livestock or infrastructure activity.

The FAO has a quasi-monopoly on the production of data on deforestation at the global level, and the conventions it adopts are mandatory gateways, although other international organizations have adopted less extensive definitions of forest. The FAO has amended its conventions over time. While the 10% threshold has not changed, there have been significant changes about what should compose a forest. Thus, rubber trees were considered as part of agricultural production before the 2000 Forest Resource Assessment and not as planted forests. This was reversed from 2000 onwards (Penna 2010), to the great satisfaction of several nations, which were thus able to see their “official” rate of deforestation reduced. Since then, several countries, including Indonesia, have tried – without success so far – to have oil palm fields accepted as forests, which would again reduce deforestation in the statistics. However, the most significant change has been to choose “net” deforestation as the preferred indicator for reporting on the evolution of individual countries (Hoare 2005). Net deforestation represents “gross” deforestation, minus reforestation and natural regeneration. This puts natural ecosystems and artificial afforestation on an equal footing. It reflects the lesser importance given to the biological diversity of ecosystems compared to wood production or carbon storage functions. It also expresses the political clout of major emerging countries, such as China, India and Brazil, which have seen a significant increase in the industrial planting of fast-growing trees for pulp production, while their natural forests continue to decline.

Deforestation has generally worsened since the beginning of the century. Data provided by Global Forest Watch (www.globalforestwatch.org/), which does not indicate deforestation in the sense of the FAO (land use change) but lists annual losses of tree cover (that can be used as proxies for deforestation), suggest average annual losses of around 15 million hectares in the first decade of the century, increasing to about 20 million hectares from 2010 onwards. Most of the deforestation takes place in developing countries, and the fate of the Amazonian forest is anchored in the mind of billions of citizens, not only in Western countries. Nonetheless, deforestation and the conversion of natural ecosystems are also alarming in developed countries. Australia and Canada have recorded significant net deforestation between 2000 and 2015, as has Russia, even though this is gross deforestation (destruction of ancient forests) “compensated” for by natural expansion of forests with climate warming. Recent large fires occurring in these countries have aggravated these trends.

The multiple and embedded causes of deforestation

Deforestation is rarely due to a single cause. Gross deforestation has direct or indirect drivers, but above all underlying causes, which can be identified in public policies, governance and the cultural representations of societies. It seems that the most powerful cause is the attractiveness of the growth pathway based on the large-scale conversion of renewable natural resources into agro-industrial assets. This cause can be analyzed from a political economy perspective, highlighting the role of the enrichment of national elites through the development of “crony capitalism” relationships.

Underlying causes

The first underlying causes: demographic dynamics

The increase in rural density linked to high population growth, particularly in Africa, is strongly correlated with deforestation rates. In DR Congo, Defourny et al. (2011) highlighted this relationship by identifying “rural complexes” composed of more or less grouped habitats, fields

and fallows. This increase in population density is related to the lack of capital of poor farmers (material, inputs, mastery of techniques allowing intensification, etc.), who tend to shorten fallow times and no longer allow the forest enough time to regenerate. The resulting progressive impoverishment of the soil leads to different types of responses: rural exodus, deforestation of new land, or evolution “à la Boserup”.

In the scheme developed by E. Boserup (1965), rural societies respond to high human density through land individualization (hedged farmlands), livestock integration and intensification (through agroforestry, for example). However, this phenomenon is not always enough to stop the dynamics of deforestation. Sometimes, the individualization of land is socially impossible and the process of intensification cannot be initiated (cf. Marchal 1985, for Burkina Faso). But, above all, access to certain cash crops (cocoa in West Africa, oil palm in South-East Asia, etc.), combined with migration movements, leads to continued high deforestation, even though the forest cover has shrunk. Thus, in the case of Côte d'Ivoire, Ruf and Varlet (2017) wrote, “deforestation seems likely to continue until the last hectare is consumed. Zero deforestation cocoa does exist, but only when and where all the forest has already disappeared”.

Another underlying cause: the continuous increase in food and non-food demand

The growing demand for land for urbanization, energy (dams, hydrocarbon deposits, etc.), minerals and, above all, agricultural products, be they food or non-food (rubber, paper, cosmetics and, increasingly, biofuels), is the second main underlying cause of forest conversion. International trade is playing an increasing role. In Brazil, about 30% of deforestation is linked to agricultural exports (Karstensen et al. 2013).

Intensification, previously based on chemical inputs but nowadays more on agro-ecological techniques (conservation agriculture, plot rotations, agroforestry, etc.), is frequently proposed as the ultimate solution to the problem of deforestation. Angelsen and Kaimowitz (2001: 3) called this vision “the Borlaug hypothesis”, named after a famous agronomist considered as the father of the green revolution. They formulated it as follows: “With food demand expected to grow steadily over the next decades, one could argue that using new technologies to make agriculture more intensive is the only way to avoid rising pressure on tropical forests.”

Although formally correct, this argument fails to distinguish between necessary and sufficient conditions (Phalan et al. 2016; Pirard and Belna 2012). Nevertheless, it is now used by most agronomists and agribusiness companies to promote, for example, the planting of oil palms, whose productivity is much higher than other oilseeds (soya, in particular), which would save space to satisfy a demand that it is assumed will increase. However, high productivity often also means higher profitability, which increases what can be called the “profitability perimeter” of deforestation. Just as the increase in the price of beef for Brazilian producers is correlated with the increase in deforestation in the Amazon (Chomitz et al. 2007), the increase in the profit margins of a handful of tropical crops (soya, cocoa, palm oil, rubber, sugar cane, etc.) leads, all other things being equal, to an increase in deforestation.

This new deforestation can be direct or indirect, the latter being generally misunderstood. To understand the concept of indirect land-use change (ILUC), it is necessary to consider the possibility that a sharp increase in demand (through, among other things, large-scale incorporation of vegetable oils in biofuels) will lead to an increase in the price of that vegetable oil, which will mean increased profitability for a number of oil palm producers. To take advantage of this, rubber, coffee, cocoa and livestock producers will convert all or part of their farms to

oil palm. As a result, it will be necessary to produce rubber, cocoa, beef, and so on elsewhere (for example in forest areas) to meet unchanged demand (EEA 2011; Gawel and Ludwig 2011).

While intensification and the increase in agricultural yields is a necessary crossing point in developing countries, it should not be expected to provide a straightforward solution to the problem of deforestation. It is first and foremost to curbing or controlling demand for agricultural and non-agricultural products (in this respect the development of first-generation biofuels is an obvious problem) that political priority should be given.

An underlying socio-cultural cause: the attraction of the “Asian model” of accumulation

Most developing countries are ruled by urban elites fascinated by Chinese-like economic growth successes, who disregard natural environment potentials, apart from a handful of countries, such as Costa Rica, which has favoured nature-based tourism. In several South-East Asian countries, an accumulation model can be found that is based on the unregulated exploitation of natural forests, which has led to the development of an industrial base around wood processing and a powerful agro-industry based mainly on palm oil and pulp. The overexploitation of natural forests in Indonesia and Malaysia, combined with the ban on log exports that has fostered the development of a powerful timber industry based on a low price for wood resources, was the first step in this accumulation (Barr 2002). In this context of overexploitation, cutting cycles of 35 years are too short to allow commercial volume recovery (Sist et al. 1998). Such an immobilization of natural capital is considered as far too long by companies. Therefore, most of these degraded forests, instead of being left for natural or assisted regeneration, have been converted into plantations. As Indonesian or Malaysian forestry companies often belong to large conglomerates that also produce palm oil, pulp or rubber, the same economic interests often follow one another in these forest areas converted to agriculture (Casson 2002). This “accumulation pattern” largely inspires many governments aiming to attain economic “emergence”, particularly on the African continent.

For the national elites who took over political power after the colonial eras, the control of the state has been an opportunity for personal enrichment and the development of a “crony capitalism” (Haber 2002) based on the looting of natural resources. The political economy of deforestation, involving top politicians monopolizing powers and business clients, was analyzed by C. Barr (1998) for Indonesia during the Suharto era. However, still in Indonesia, the decentralization of powers through subdivision of existing jurisdictions has aggravated illegal logging and subsequent deforestation, as more policy actors obtain rents from allowing illegal logging (Burgess et al. 2012). This political economy is embedded in an array of demographic, social and economic causes that combine in various ways in the different countries.

Indirect causes

Local agrarian systems in crisis

The role of poverty in deforestation is a subject of debate. Leaving aside the growing role of agribusiness, which is far from being present in all tropical areas, Geist and Lambin (2002) emphasized interactions between factors, such as population displacement, loss of access to part of their land and environmental degradation. Angelsen and Kaimowitz (1999) insisted on investment as a condition for converting forests to other uses, suggesting that it is not the poorest who deforest but those who achieve a certain level of accumulation. This idea was taken

up by Moonen et al. (2016) for DR Congo, where it is the rural populations marketing their agricultural products, and also the most educated people, who are most active in land conversion processes (see also Pacheco 2009 for the Amazon).

Cultural factors should not be neglected. Forests as a “development frontier” that must be pushed back is a representation that can be found in both Latin America – particularly Brazil – and South-East Asia. On the island of Borneo, in the Indonesian sector (Kalimantan), people see the “exit from the forest” as an exit from poverty, including the Penan “indigenous” people (Feintrenie et al. 2010). The same can be said in Africa, where Bantu farmers in Cameroon commonly talk about “breaking the forest” to expand their fields.

Ambiguous land rights

Many developing countries endorsed the colonial conception of forests as spaces “without masters”. It was a way of denying tenure rights to local people and communities in order to allocate timber or agricultural concessions to provide rents for their political clients.

The phenomenon of land grabbing is particularly prevalent in wooded areas (Gibbs et al. 2010; Messerli et al. 2014). Governments use a “presumption of State ownership” over forests to allocate large areas to companies, hoping to avoid land conflicts that could result from allocations in more narrowly appropriated agricultural areas (Karsenty 2018). This is one of the driving forces behind the phenomenon of “land grabbing” (Karsenty and Assembe 2011).

More generally, uncertainty about land rights can lead actors to “develop” (i.e. clear) land in an attempt to assert an individual right of ownership: many laws allow this, and it is also reflected in customary systems where ownership is achieved through an “axe right” or a “fire right”.

Direct drivers

The role of agricultural dynamics

Agriculture accounts for about 80% of the direct causes of deforestation (Hosonuma et al. 2012). A distinction must be made between agribusiness (e.g. large soybean farms in the Amazon), family cash crops (e.g. small cocoa plantations in Côte d’Ivoire) and food-oriented agriculture (cassava or rainfed rice plantations). Commercial agriculture as a whole accounts for 68% of deforestation in Latin America, but only about 35% in Africa and Asia (Hosonuma et al. 2012). Overall, a third is attributable to food-oriented agriculture, with this percentage rising to 40%–50% and above in sub-Saharan Africa.

Outside Africa, the trend is towards an increase in the share of commercial agriculture, especially agribusiness (Boucher et al. 2011; Rudel et al. 2009). The development of oil palm at the expense of tropical forests is the most significant dynamic. This highly profitable crop is favoured by both agribusiness and smallholders. The installation of these plantations on “degraded” forests (ambiguous term, which most often refers to regenerating forests) often finds its rationale with the profits made by companies from the sale of wood resulting from conversion.

The “tandem” between logging and agriculture

Conversions of forests to pasture, oil palm or soybean fields are direct, immediate drivers of deforestation. However, quite often this radical change has been preceded by phases of degradation, which have themselves been encouraged by the opening up of roads, an indirect cause of future deforestation.

Different combinations of factors have been identified (Geist and Lambin 2002). The “selective logging–agriculture” pair is the most well known. In tropical countries, where most of the deforestation is concentrated, timber exploitation (logging) does not generally lead directly to deforestation, as only a few trees are extracted per hectare during selective harvesting. Nevertheless, the opening up of roads, the establishment of wood processing industries and the economic opening up caused by new activities may attract populations in search of agricultural land. This is often accompanied by the development of unregulated charcoal and hunting activities, which can gradually lead to deforestation. However, this is not inevitable and demographic characteristics matter: in Gabon, forest concessions cover three-quarters of the country, but deforestation is very low, due to the very limited presence of farmers outside peri-urban areas in a mostly urban country of around two million inhabitants.

Are forests commons?

Tropical forests are frequently presented by policymakers as a common, common good or common heritage, global or local, or sometimes as “global public goods” (see Humphreys 2014; Smouts 2003).

This one-dimensional vision inevitably leads to geopolitical misunderstandings. A twofold dimension of the object “tropical forest” should be considered for attempting to establish a shared international regime for its conservation. This double dimension refers, on the one hand, to forests as resources and, on the other hand, to forests as a support and condition for ecosystem services.

The “global public good” issue

The classic definition of a public good is that given by Samuelson (1954), which explicitly identifies the property of non-rivalry (consumption of the good by one agent does not reduce consumption by other agents) and implicitly the property of non-excludability (it is impossible to exclude an agent from consuming the good). This definition is theoretical and can only rarely be applied to the letter, hence the frequent use of a broader class of types of goods (see Table 19.1).

Awareness of global issues in the 1980s encouraged the extension of the concept of public goods on a global scale. The term global public good (GPG) was coined by the report entitled “Global Public Goods: International Cooperation in the 21st Century” (Kaul et al. 1999), and it is worth noting that the definition of GPG differs significantly from that of a simple public good on a broader scale. It is moving from a good characterized by its *consumption* (e.g. non-rivalrous and non-exclusive use, e.g. use of road infrastructure), to a good whose *effects* matter (e.g. less air pollution improves health). For example, Stiglitz (1999) refers to goods whose “benefits are for the entire world population”. While GPGs are, therefore, generally intangible (climate,

Table 19.1 Different types of goods: rivalry and excludability

	<i>Excludable</i>	<i>Non-excludable</i>
Rivalry	Private goods	Common pool resources
Non-rivalry	Club goods	Public or collective goods

economic stability, knowledge, etc.), they depend on a material support. Thus, the production of these global services justifies the conservation of the support: the stabilization of the climate and the maintenance of services linked to biodiversity justify the protection of forests.

How do forests fit into these categories? A 2013 World Bank document starts with this statement, “The Amazon Rainforest is a global public good” (Navrud and Strand 2013). During the “mega-fires” that destroyed millions of hectares of the Brazilian Amazon in 2019, calls were made, notably by President Macron in France, to protect this “common good”, triggering a stinging reply from J. Bolsonaro about neocolonialist temptations.

Resources versus services

The hesitation in qualifying tropical forests as a whole (excluding private forests) is indicative of a one-dimensional view of the object itself. In reality, this question can only be addressed by considering the two-dimensional nature of the object “tropical forest”, which is at stake in international agreements, in an attempt to set up a shared regime for its conservation. This double dimension refers, on the one hand, to forests as resources and, on the other hand, to forests as a support and condition for services.

Tropical forests provide ecosystem *services* to the entire planet but depend on sovereign states and local actors with rights, who use them primarily as economic *resources* (timber, land, etc.). In this sense, they do not fall within the scope of “global public goods”, insofar as they do not meet the classic characteristics of public goods in terms of the impossibility of exclusion of third parties and non-rivalry in consumption. For example, successive Brazilian governments, always highly suspicious of anything that might constitute, in their eyes, an attempt to “internationalize” the Amazon, do not intend to let the Brazilian natural forest be qualified as a global public good.

When dealing with *services*, we refer here to the notion of ecosystem services, popularized by the Millennium Ecosystem Assessment (MEA 2005), a collective expertise exercise conducted in the 2000s, whose report serves as a reference to guide international discussions on these subjects.

These services are defined as “the benefits that humans derive from ecosystems”. They include “provisioning services” (wood, agricultural products, fibre, but also genetic resources), which refer to potential marketable goods. Regulatory services refer to what economists consider to be positive externalities (carbon fixation through photosynthesis, the capacity of a medium to filter water and regulate excess flows, biological diversity, pollination by certain insects, etc.). Other (cultural, etc.) services refer to intangible elements of a heritage nature (beauty of landscapes, spiritual inspiration contributing to a collective identity, etc.).

Local commons? The diverse fortunes of “community forests”

A large proportion of NGOs consider that the key to forest conservation lies in the recognition of communities’ land rights and their empowerment in the management of their resources. This view is endorsed by IPBES (2019) in its “Global Assessment Report on Biodiversity and Ecosystem Services”.² This hypothesis is based on the idea that “communities” would have a different, non-market relationship with nature and would be closely dependent on forest resources for their well-being. Language hesitates between “indigenous peoples” and “local communities”, the use of the former being more frequent, and politically acceptable, in Latin America than in Africa, where the category of indigenous was, until recently, not considered relevant

by anthropologists (Bahuchet and de Maret 2000). In West Africa, those who call themselves indigenous simply want to inform migrants that they have prior rights to land.

In reality, the relationships of the different human groups encompassed by the expression “local communities” with their natural environment are not homogeneous. Above all, these relationships are not static. In the 1990s, Indonesian agroforests, complex agroforestry systems that met the monetary needs of farmers while maintaining high biodiversity and forest-type cover, were frequently mentioned in the literature as a way forward for the future of forestry in populated rural areas. However, these agroforests have gradually been converted by the farmers themselves into less diverse, but more profitable, oil palm plantations. In Madagascar, “sacred forests”, once no-go zones, were devastated by local communities who saw migrants take over the resources of these forests for themselves (Fauroux, 2001).

More generally, Robinson et al. (2011) conducted a meta-analysis of the “forest outcomes” of land tenure arrangements, and noticed contrasting results between Central America (with, globally, rather positive outcomes), South America (mitigated results) and Africa. They especially found an “association between negative forest outcomes and communal land in Africa”. This suggests that tenure is only one factor among many others (local traditions and history, way of life, economic systems, governance context, etc.) that shapes the outcome of a given tenure system, a point too often overlooked.

Part II: Forest-related market-based instruments

The attempts to use international trade to tackle deforestation

The rise of independent certification of forests

In the 1990s, some “institutionalized NGOs”, such as the World Wildlife Fund (WWF), agreed on the counterproductive nature of boycotting tropical timber. The hypothesis was that a large-scale boycott would reduce timber market value and could lead governments to withdraw from forest management efforts, and further encourage the conversion of forests into agricultural land.

An independent standard of certification, the Forest Stewardship Council (FSC), with a pluralistic governance (NGOs, scientists and the timber industry) saw the light of day in 1994. The standard proposed principles and criteria for “good management” of forests in order to reassure consumers and encourage them to pay more for wood bearing the label. A competing “global” label, the PEFC was launched some years after, first in Europe, then with a worldwide ambition. It was based on the mutual recognition of national certification standards. Twenty years later, more than 200 million ha were certified by the FSC (and even much more by the PEFC, thanks to mutual recognition). The vast majority of areas were certified in temperate countries rather than in tropical forests, which are the most threatened.

Certification, a market instrument supposed to express “consumer power”, has often been greeted with some scepticism (see Karsenty 2019). This is because of the gradual South-South shift in tropical timber trade, the fragility of an instrument based exclusively on trust, the lack of a scientific consensus on “criteria and indicators” of sustainability, or because it does not address extra-sectoral dynamics or public governance, and it bypasses governments (Smouts 2003). Certification has not curbed deforestation, but its spread is indicative of the attractiveness of the idea of economic incentives and private governance over the traditional reliance on public regulations for forest management (Cashore et al. 2004).

Beyond timber, certification schemes have been introduced to distinguish between agricultural products, based on either social, safety or environmental criteria. This is particularly true for oil palm, with the Roundtable on Sustainable Palm Oil, and cocoa production, with the Rainforest Alliance. Currently, food commodity certification schemes are evolving to incorporate “zero deforestation” criteria in their standards.

Tackling illegal logging through bilateral trade agreements

Western countries have expressed concern about the degree of illegally harvested timber in international trade and have adopted regulations to criminalize imports of illegal timber (Brack et al. 2004). In the USA, it was a revision of the Lacey Act; in the EU, in 2013, it was the EU timber regulation (EUTR), which requires importers to carry out due diligence before marketing wood on the European market. Other countries, such as Japan and Australia, have adopted similar measures. Even China adopted, by late 2019, a new Forest Law that sanctions the purchase of timber known to be illegally harvested, whatever the country of origin.

The EU combines this regulation with a support programme for producer countries, the FLEGT (Forest Law Enforcement, Governance and Trade) initiative launched in 2003, which takes the form of voluntary partnership agreements (VPAs) aimed at helping countries to set up legality and traceability systems. This would mean allowing a kind of “country certification” through “FLEGT licences” that would cover timber exports to the EU, dispensing importers from carrying out the burdensome due diligence.

FLEGT efforts are clearly targeting governance through the reinforcement of public institutions and the participation of civil society, while certification is seeking to improve the forest management practices of the private sector. However, the FLEGT process greatly relies on technical instrumentation (databases, tracking technologies, etc.), while obstacles are often rooted in corruption and vested interests within the public administrations, and there is a lack of political will for improving transparency.

The EU points out as evidence of governance progress the increased participation of NGOs in several forums and projects. However, to date, and despite hundreds of millions of euros invested, only Indonesia has managed to issue FLEGT licences. In Africa, the continent with the largest number of countries involved, the process is lagging behind, especially in the Congo Basin. Despite initial ambitions of both national governments and the EU, timber sold on domestic markets by small companies or small-scale sawyers is not covered by national legality verification systems. In countries such as Cameroon, Ghana, DR Congo and Côte d’Ivoire, all involved in VPA processes, domestic markets are often larger than exports.

These disappointing results, so far, illustrate the overestimation by the EU of the potential of “incentives” (obtain better access to the lucrative EU market) targeted at countries with “limited statehood” (Krasner and Risse 2014). As for REDD+ (see later), the VPA proponents overestimated both the willingness and the capacity to reform of governments plagued by endemic corruption and ill-equipped administrations.

Private and public policies for deforestation-free commodities

Nowadays, industrial commodity production for export and trade is the largest driver of tropical deforestation, outpacing forest clearance for local consumption by subsistence farmers (Austin et al. 2017). A study for the European Commission (2013) found that forests – mainly in tropical countries – lost 127 million hectares between 1990 and 2008, of which 29 million hectares

can be attributed, according to the report, to land conversions to meet demand from third-party countries. The EU contributed 8.4 million hectares to this assessment. For instance, the EU imports soybean meal from Brazil (20% of total soybean imports) to feed European livestock. In total, the production linked to meat consumption accounts for 60% of the deforestation imported by the EU, depending on the indicator used.

Roundtables and certifications

Because of this growing awareness of the responsibility of the global demand for food and bio-fuel in deforestation, large international corporations under pressure from Environmental Non Governmental Organizations (ENGOS) decided, from the 2000s, to draw up deforestation-free policies for “cleaning” their sourcing of agricultural products. These are called “zero deforestation” private policies.

The first initiative was the Roundtable on Sustainable Palm Oil (RSPO) in 2004, and the Round Table on Responsible Soy (RTRS) in 2006. Many others followed, for various commodities. Promoted by the WWF, these are international voluntary initiatives that deliver certifications (Garrett et al. 2019). RSPO has been the most widely adopted by corporations, but it has been criticized for its lack of effectiveness in terms of deforestation and biodiversity protection (Gatti et al. 2019; Ruyschaert and Salles 2014).

These certification schemes are also criticized by several scientists, as they are said to favour large-scale companies at the expense of smallholders (Lemeilleur and Allaire 2018; Napitupulu and Rafiq 2018; Saadun et al. 2018), given the cost of independent third-party verification and, for the most stringent ones, strict segregation of products and traceability systems. Some go further and question the market-oriented and utilitarian dimension of certifications, reducing “the expression of pluralism to a pluralism of interests” when defining sustainability (Cheyns et al. 2016).

Private initiatives, as such, rely on varying definitions of forests and deforestation. Certification is sometimes granted to recently converted areas, depending on the “cut-off date” adopted by the standard. This is the last date after which, for being certified today, forest clearing should not have taken place (e.g. “no forest on the plot after 31 December 2014”). Another voluntary initiative, the Brazilian Soy Moratorium, a private sector initiative established in 2006 by the largest soy companies in response to a damaging Greenpeace campaign, has led to a significant decline in soy-based deforestation in the Amazon (Gibbs et al. 2015). However, the pressure has been displaced from the Amazon to the Cerrado Biome, a biodiversity-rich woody savannah. This is a typical example of “leakage” and the limitation of acting only on the supply side, as global demand for soy – associated with the need to provide food for industrial livestock farming – remains unaddressed.

Emerging public policies in producer and consumer countries

Public policies were lagging behind these private initiatives until a 2014 UN Summit in NYC. Several governments and companies made commitments to promoting “zero-deforestation” agricultural commodity production. However, as for deforestation definition, the concept is subject to interpretation: some interpret it as “zero net deforestation”, that is, with the possibility of “offsetting” for the loss of natural forests by planting trees on the least productive land. Garrett et al. (2019) show that the commitments made by nearly half of the companies allow agricultural expansion in the forest to continue without significantly deviating from “business-as-usual” practices, in particular by adopting “zero net deforestation” policies to “offset” losses.

For environmentalists, only a “zero gross deforestation” approach can conserve most of the ecological services of a natural ecosystem. But, as Brown and Zarin (2013) noticed, in tropical countries that have little non-forested land either suitable or available for agriculture, zero deforestation would essentially mean halting agricultural expansion, which may prove difficult to sustain. In Gabon, the government is considering the adoption of a new definition of “forest” based on a high threshold of carbon content per hectare (118 t C/ha, i.e. a dense forest) in order to keep the possibility to expand agriculture on wooded lands no more considered as forests. Compared to the forested area under the FAO definition, the new definition, if adopted, would allow a conversion of around 2.2 million hectares and markets the products cultivated on these lands as “zero deforestation” commodities.

In Europe, the Amsterdam Declarations were launched in 2015 by seven countries, with the ambition to preserve forests through “responsible supply chain management”. Oil palm was the first commodity targeted, but soy is also considered. France prepared a national strategy against “imported deforestation”, launched in 2018.

However, most of the actions proposed in these initiatives rely on information and voluntary commitments, not on coercive regulation, such as banning products from risky areas. A gap remains between the rhetoric of “imported deforestation” and specific policy measures to tackle EU consumption fuelling tropical deforestation (Weatherley-Singh and Gupta 2018). European countries, in particular, do not want to jeopardize their diplomatic relations with commercial partners such as Indonesia and Malaysia, which were already strained since the EU decided to remove palm oil from the list of “sustainable sources” for biofuels under the revision of the Renewable Energy Directive (RED II), and to phase it out by 2030. The aforementioned South-East Asian countries reacted fiercely, threatening European countries with trade retaliation – especially aircraft purchases.

Towards an international regime based on results-based payments?

Alongside private and public initiatives seeking to curb deforestation through forest-related products traded internationally, multilateral organizations have attempted to address the issue of forest conservation and sustainable management through the traditional instruments of international conventions, programmes and planning. Gradually, the approach evolved from a technical and sectoral approach to a broader and economic perspective: from forest policies to forest-related policies (i.e. all the public and private policies that affect forests, cf. Singer 2008), and the issue of economic incentives became central in constructing an international regime for protecting forests. REDD+ became emblematic of this incentives-based architecture currently being actively promoted by influential donors and organizations.

The initial influence of forest experts: planners and managers

The fight against deforestation dates back to the mid-1980s with the launch of the Tropical Forest Action Plan (TFAP) on the joint initiative of the FAO, United Nations Development Programme (UNDP), the World Bank and the World Resources Institute, and its national variations in the form of programming exercises and project “shopping lists”.

The key words are “sustainable production of goods and services”, “forest management plans” and “land use plans at national level”. The perspectives were narrowly sectoral, and the debate was dominated by forest experts. The first forest-only international agreement, concluded under the auspices of the United Nations Conference on Trade and Development (UNCTAD) in 1994 (and updated in 2006), dealt with tropical timber, which indicates the

importance given to the productive function. An international organization was set up (ITTO – International Tropical Timber Organization), inspired more by the logic of producer and consumer forums around commodities – which were flourishing at the time – than by a desire to collectively manage multifunctional ecosystems.

The results obtained were disappointing: deforestation continued and unregulated logging remained the most common practice. But the TFAP process succeeded in getting forest policy reviewed in several countries, particularly in Central Africa. This was followed by National Forest Action Plans (NFAP) or National Forest Programmes (NFP), national exercises that remained within the perspective of the TFAP and focused on field projects (management, reforestation, etc.).

The growing influence of theoretical framing by economics

At the end of the 1980s and the beginning of the following decade, many developing countries were in a difficult economic situation, linked in particular to the low prices of raw materials, which acted as an indicator of the weaknesses in the management of governments installed in rent-seeking habits.

The international financial institutions, led by the World Bank, concluded support agreements with countries experiencing budgetary difficulties and intervened directly in national policies. This was the time of structural adjustment and conditionalities (Seymour and Dubash 2000). The forestry sector was thereafter viewed from a different angle: the experts were, above all, economists who were moving away from the technical approach that characterized the “FAO period” to introduce new considerations, such as (woodland) prices, (good) governance and environmental externalities (Grut et al. 1991). Intervention in forest policy making was much more marked, with intrusion in sensitive areas (with regard to state sovereignty), such as forest taxation, forest title allocation policies and decentralization of forest management. The “laboratory” countries were Bolivia and Cameroon, with a very marked focus on the issue of forest concessions and tax reform (Bojanic and Bulte 2002; Brunner and Ekoko 2000). A global alliance between WWF and the World Bank was concluded and institutionalized in 1998. Its aim was to increase the surface area of protected areas by 50 million hectares and to promote forest certification. While the first objective was achieved, the second was a semi-failure. Only 22 million of the 200 million hectares were certified in the Bank’s client countries, or just over 10%. This alliance also reflects the major shift in the 1990s and the rise of environmental issues in international discussions on forests in the wake of the United Nations Conference on Environment and Development in Rio (Humphreys 2014).

New instruments emerged in the late 1990s, such as “payments for environmental services” (Landell-Mills and Porras 2002) and “conservation concessions” (Nielsen and Rice 2004). In the absence of a specific international convention on forests, the Convention on Biological Diversity became the focal point where concerns about forest decline were expressed and rhetoric in favour of local forest management developed.

A fragmented and ineffective international regime

While there is an international forest regime based on a number of international principles, networks and institutions (Humphreys 2012), it is fragmented and incomplete. Fragmented, because the various principles and institutions around which the international debate is organized cover only limited themes of the global forest issue. The lack of an international convention on forests is one aspect of this problem, but it is not the only one. Tropical forests are

territorialized resources that support multiple activities and do not lend themselves well to a unified regime. The difficulty lies essentially in the limits of what are known as “forest policies” in developing countries, which have only a limited scope compared to other public policies: land, agricultural and social policies in particular. These other policies themselves express a number of collective choices of societies based on representations of economic growth, justice and sovereignty.

While these representations are not immutable and are subject to challenges between social and political forces within nations, it is striking to see how far tropical forest representations differ between the North and the South. Undoubtedly, the industrialized countries favour a conservation agenda justified by global changes. Developing countries are differently sensitive to such an agenda. Some, such as Brazil and Malaysia, fear that it will lead to limitation of their sovereignty and what they consider to be their right to develop using their natural resources – as did the industrialized countries. Others, such as African countries and Indonesia, consider that there are financial opportunities to be seized, without necessarily having the means or the will to transform their public policies (land, agriculture, etc.) and governance practices that affect forests.

The uncertain REDD+ process

Since the late 1990s and the first steps towards establishing international mechanisms for trading CO₂ emission permits, the issue of forests has been one of the most difficult issues in the negotiations on the Climate Convention. The Clean Development Mechanism (CDM), a project-based scheme which started in the early 2000s, aimed to reduce the emission reduction costs faced by companies in industrialized countries signing up to the Kyoto Protocol (UNFCCC 1997). The principle was to offset emissions in industrialized countries by carrying out projects in developing countries, where marginal emission reduction costs are lower. However, a specific difficulty interfered with an inclusion of forests on an equal footing: the non-permanence of stored carbon (whereas in other sectors, avoided emissions are considered “permanent”).

The thorny issue of non-permanence

The IPCC has conventionally fixed the residence time in the atmosphere (i.e. the duration of its “radiative forcing” effect) of a CO₂ molecule at 100 years (standard for measuring the radiative powers of other gases). It is often suggested that complete neutralization of the climate effect from the emission of a CO₂ unit implies an equivalent sequestration of this gas in biomass for a period of a century. This is more a necessary convention for comparison with other greenhouse gases than atmospheric chemistry data (the IPCC indicates that the residence time varies between 5 and 200 years), since a fraction of the CO₂ emitted remains in the atmosphere for a very long time. What counts in global radiative forcing is the amount of excess CO₂ that remains in the atmosphere (related to the fact that there are more emissions than absorption at global level) (Möller 2010). The higher the stock of CO₂ in the atmosphere, the longer the average residence time increases. In fact, a complete neutralization of emissions by forest projects for the protection of forests or plantations would require almost perpetual storage, which no project can of course guarantee.

The solutions proposed by the experts to solve this problem, such as time-limited expiring credits for plantations, have never been judged satisfactory in terms of environmental integrity. Very few “expiring carbon credits” have been sold. As for forest conservation projects, they have never been eligible for the CDM because of the risk of “leakage”, that is, the displacement of

deforestation pressures from one place to another. Lastly, the UN CDM authority made a fairly strict application of the financial additionality criterion for forest plantation projects (projects that are theoretically profitable are not allowed to issue carbon credits). This also explains the very small proportion of forest projects in the total number of CDM projects. As of April 2012, fewer than 40 projects had been registered (less than 1% of the total). The CDM has been dormant for many years now and is to be replaced by an upcoming mechanism provided for by Article 6 of the 2015 Paris Agreement.

In response to this failure, a proposal to compensate countries for the reduction in emissions from deforestation, eventually extended to particularly include the increase in forest carbon stocks, was put forward in 2005 (Santilli et al. 2005). The objective of the researchers and NGOs making the proposal (which would later be called REDD+) was twofold: to have an instrument to remunerate forest conservation and to introduce an incentive instrument for encouraging forest-friendly public policies. The transition from the CDM “project” scale to the “country” scale made it possible to avoid the objection of leakage risks, even though the question of the displacement of deforestation between countries adopting divergent policies persisted. The financing of the mechanism remained an open question. Lula’s Brazil, in particular, opposed the use of carbon credits, considering that it was primarily up to the industrialized countries, which had a historical responsibility, to make the necessary efforts to reduce their own emissions before “buying” reductions from the countries of the South. Evo Morales’ Bolivia, and many NGOs, opposed carbon credits, assimilated to a “commodification of nature”.

In the meantime, alongside the initial reduction of deforestation activity (combining the “biodiversity” and “carbon” agendas), other activities have been deemed eligible, namely plantations, forest management and the “conservation of carbon stocks”. This last “activity”, advocated by “high forest cover, low deforestation countries” such as Guyana, was designed to remunerate the “past efforts” having, supposedly, led to the conservation of forests. This inclusion indicates that the additionality principle, a key feature of the CDM, is only implicit in REDD+. Countries must design baseline scenarios of emissions from deforestation and degradation (“what would have been the emissions without the REDD+ measures?”), but allowing the payment for “past efforts” (often a rhetorical figure to take advantage of a low population and limited pressure on forests) shows how many governments intend to bypass the additionality principle.

National sovereignty and business-as-usual scenario

It took 10 years of negotiation for the instrument to be enshrined in the Paris Agreement in 2015. The latter, in the spirit of voluntary commitments, allowed for sales of “emission reduction units”, but also left the possibility for the Green Climate Fund to remunerate countries for “result payments” based on REDD+ activities. The Green Climate Fund is the only multilateral window that can make payments for results, although several bilateral processes, with Norway or the World Bank, are also making payments.

In international commitment mechanisms, results are measured against a “baseline”, that is, a past or anticipated level of emissions (a *business-as-usual* anticipation, or BAU). In fact, the use of a past reference implicitly suggests that the past is a predictor of a future BAU, that is, unchanged economic policies and conditions. As for the anticipated references, they include “development needs”, which are reflected in the anticipation of increased deforestation in a BAU scenario. In this case, reduction commitments are not absolute but relative reductions: an increase in deforestation less than the anticipated reference is called a “reduction”.

Box 19.1: REDD+, a proposal inspired by the theory of rational choices

“REDD+ countries have an incentive to reduce deforestation up to the point where the marginal cost of reductions (i.e. the national supply curve of REDD) is equal to the international compensation, for example, the market price for REDD+ credits” (Angelsen 2008: 59). Such a statement is typical of the “theory of rational choices”. The “storyline” of REDD+ as an incentive-based system, inspired by the rational choices theory, can be stated as follows: “::Deforestation in developing countries is a problem of opportunity cost: the governments *decide* to deforest, or not, or the countries choose to deforest as they earn more compared to conservation or SFM. The State is assimilated to any other economic agent, making rational decisions by comparing the relative prices associated with the alternatives offered. Then, the government is acting by adopting the appropriate measures for reducing deforestation and modifying its development pathway” (Karsenty and Ongolo 2012: 39). This storyline is consistent with the position that describes REDD+ as “not encroaching on the sovereign discretion of nations to design acceptable and adequate policies and measures nationally” (Streck 2010: 389).

The references (BAU scenario, but also forest definitions) are proposed by governments. Methodologies are reviewed by experts appointed by the UNFCCC, but a rule adopted by CoP 19 disallows experts from commenting on the public policy assumptions underlying the proposed reference (UNFCCC, 2014).³ In other words, if a potentially recipient government considers that its BAU development would require a massive conversion of forest areas to agriculture or livestock, and designs its reference scenario accordingly, this is not questionable.

Strategic behaviour of states?

Adopting the assumption of governments acting on the basis of “rational self-interest expectations”, the obvious interest of countries wishing to be remunerated is to choose a reference, past or projected, that minimizes the efforts to be made to combat deforestation and maximizes the expectation of being remunerated. In practice, this means choosing a past reference period during which deforestation was high (a strategy adopted by Brazil), or proposing a BAU scenario anticipating a sharp increase in deforestation rates. While reference scenarios are criticized for their rather arbitrary nature and the impossibility of being able to verify them (Obersteiner et al. 2009), adopting a historical reference does not guarantee the additionality of reductions either.

Unlike emissions in the energy or transport sector, emissions from deforestation are much more variable, as they are linked to different economic and political factors, but also to climate irregularities (rainfall/droughts). Since the main source of deforestation is agriculture or livestock, prices at the farm gate are one of the main factors determining the marginal level of deforestation. The higher these prices, the more producers will increase the area devoted to their speculation. Higher marginal profit margins make the conversion of less fertile or more distant land profitable. In Brazil, deforestation rates are correlated with beef producer prices (Chomitz et al. 2007; Verburg et al. 2014), which are themselves linked to the money exchange

rate (Richards et al. 2012). In Suriname and Guyana, there is a correlation with the gold price (Dezêcache et al. 2018), in Indonesia and Malaysia with the palm oil price (Gaveau et al. 2019), in Côte d'Ivoire and Ghana with the cocoa price, and so on. Carrero and Fearnside (2011) also highlighted the role of land speculation in Brazil (over 30% with speculation than without, according to their calculations), which relativized the “potential income per hectare” factor used in many land use change models.

Other factors are involved, such as road opening, or population density in forest areas. Although population growth can be easily anticipated over mid-term periods, it is not the case for regional conflicts leading refugees to settle in forested areas (Carr 2009).

Is Brazil's “reference level” appropriate?

Brazil was the first country to benefit from “payments for results” for the decrease in deforestation observed in 2014 and 2015 compared to a baseline derived from deforestation for the 1996–2015 period (forest reference level). Brazil uses a historical reference (see Figure 19.1), and therefore “benefits” from the very high levels of past deforestation, before the policy measures implemented by the Lula government. Formally, this reference does not contradict the rules adopted for the REDD+ mechanism, but it does reveal several problems. With the election of Bolsonaro, Brazilian environmental policy changed radically. Ironically, it is his anti-ecology government that will benefit from the “payments for results” of the Green Climate Fund, results partly inherited from the Lula government's environmental policy. In addition, Brazil receives payments while deforestation in the Amazon is resuming sharply, with an increase of 43% over one year (2018–2019 against 2017–2018).

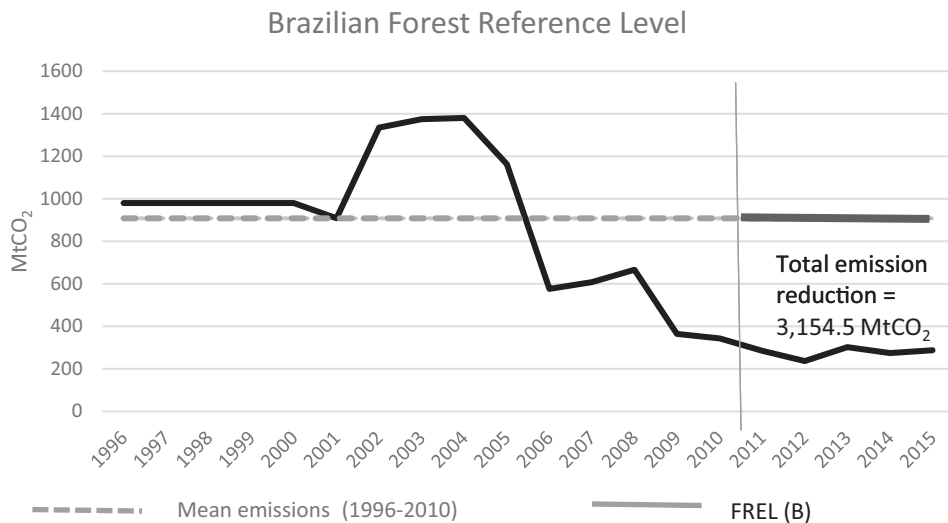


Figure 19.1 Forest reference level proposed by Brazil and estimated emissions from deforestation in the Amazon biome

Source: Data taken from the second biennial update report of Brazil to the United Nations Framework Convention on Climate Change (2017); figure by the author.

“Worst-case policy” or common (but differentiated) responsibility?

Beyond the case of Brazil, questions arise about rules that base results on a comparison with a reference understood as a business-as-usual evolution (the historical reference being implicitly a predictor of the most probable future without new efforts to fight deforestation). The BAU would thus always be a virtual implementation of the “worst-case policy”, as if internal and external developments in political contexts were not to evolve with the realization of the urgent need to act against climate change.

To say that, without financial incentives, “my future would have been irresponsible” is to speak of a dubious future that was unlikely to happen once states accepted the international regime of “common but differentiated responsibility” in whose name they would claim remuneration for their performance.

Part III: Rethinking results-based payments

The different policy responses considered to stop deforestation and conserve forest-related ecosystem services have some genuine potential, but their common shortcoming is to overlook the political economy dimension of the various issues they try to address. Responses targeting international trade, be they certification schemes or zero-deforestation commitments, fail to question the implicit assumption by which “the global demands have to be satisfied” and hardly question the WTO rules of international trade.

The growing attraction of economic incentives proposed to governments for reforming and designing more friendly forest-related policies fail to recognize the composite nature of states, where policy decisions are not the result of a rational cost-benefit evaluation but of complex policy decision processes, where vested interests and corruption play central roles. REDD+, with its ambitions to be the largest results-based payment in terms of scale, reflects this naive view of the political economy.

It would be futile to seek a miraculous solution to stop deforestation, whose causes are numerous and some of which are the consequence of growth dynamics in the countries of the South, while being linked to poverty and underdevelopment in a context of growing inequalities in tropical countries. The systemic aspects of the problems and their political economy dimension are obvious, and so must be the solutions. A non-comprehensive set of priority policy interventions can be suggested:

- Collective action through the patrimonialization of services and the institutionalization of local rights;
- Conditioning international remuneration on changes in forest-related public policies;
- Give priority to investments and incentives to local actors;
- Coordinated action on demand, international trade policies and rules.

Patrimonialization and institutionalization

The notion of ecosystem services, sometimes criticized for its utilitarian dimension, nevertheless makes it possible to defend the idea of a common heritage constituted by these global services without calling into question the principle, set out at the Rio conference in 1992, of countries’ sovereignty over their natural resources.

Recognizing global ecosystem services as a common heritage whose destruction is an environmental crime would provide arguments and support initiatives aiming to set up international

courts for judging this type of crime. The issue is as much cultural as legal, in order to enable civil societies to legitimize their actions to fight deforestation and amend legislation.

Mapping and recognizing customary land and resources rights of communities and families in developing countries should be one of the top priorities in the international policy dialogue. The difficulty is both conceptual and political: which one of these identified rights should be recognized as exclusive rights, to protect the poor against land grabbing, and which one should be recognized as overlapping rights, shared with other stakeholders and to be managed as new commons? In increasingly populated landscapes and diversified economies, this is one of the biggest challenges to be addressed by land-use planning inclusive processes.

Investment, the neglected priority

The fate of forests is largely determined outside the forest sector. The evolution of agriculture and livestock systems is a key issue. Ecological intensification through peasant agroecology, crop-livestock associations and agroforestry should become the priority of public policies. The necessary investment could be channelled through payment programmes for environmental services (PES) to finance changes in producer practices. Such programmes would combine conditionalities and conservation incentives to counteract the “rebound effects” associated with intensification (Karsenty 2011). Part of the financing effort could come from domestic taxation of some goods consumed mainly by urban populations. Earmarked taxes with low rates and a broad base, as implemented by emerging countries such as Costa Rica and Mexico with fuel or water distribution to finance their national PES programmes, should be considered. In the poorest countries, where the cost of fuel is too socially sensitive, other taxation bases might be contemplated, such as phone units, beer and sodas.

It will be necessary to finance policies for the recognition of local rights (participatory mapping, registration of rights, etc.) and appropriate forms of land tenure security to protect rural communities from land grabbing for agribusiness. The recognition of territorialized rights, be they exclusive or not, for the benefit of communities and rural families using forested areas is not only an act of justice but also the necessary, but not sufficient, condition for working in the long term to conserve and restore forest resources. Forest concessions might evolve through the recognition of overlapping tenure rights, which should be mapped and institutionalized to be used for co-management and benefit sharing (Karsenty and Vermeulen 2016).

Investment in education, particularly girls’ access to long-term education, is essential to accelerate the demographic transition. The African continent, where this transition is lagging behind in many countries, is particularly affected.

Moving away from the reference trap and rethinking payments for results

The principle of “payments for results” has no chance of achieving its objectives without extensive and sustained support for the investments needed to produce those results, particularly in countries with failing institutions. If developed countries decided to support such large-scale investments, a principle of financial incentives to encourage reform initiatives may be useful, provided that the notion of “results” is meaningfully rethought.

From this point of view, the problem of the “right” reference level for REDD+ is unresolved. On the one hand, no spatial and economic model is able to predict the evolution of major economic and climatic variables that control deforestation rates (agricultural commodity prices, droughts and rainfall, etc.), which leaves the door open to the construction of

“optimized” scenarios, with variables chosen according to the strategic interests of the proposing states. On the other hand, the very logic of the business-as-usual projection provides perverse incentives, insofar as it encourages governments to virtually free themselves from the “common but differentiated” liability regime inherited from Rio 1992 through the construction of worst-case scenarios.

The aim might be to keep the principle of payment for results, without tying one’s hands with an automatic payment procedure based on an unverifiable level/reference scenario. The only meaningful criterion is the coherence of public policies that potentially have impacts on forests. The effectiveness of measures to contain deforestation (formal adoption of laws and regulations, land use planning, enforcement efforts, etc.), the effectiveness of sanctions imposed on perpetrators of environmental offences, and other public choices affecting ecosystems can be relied upon. Independent collective expertise, under the joint aegis of the “Climate” and “Biodiversity” conventions, should be able to evaluate the efforts made by governments to combat deforestation and degradation.

Reforming international trade

Without profound changes in consumption patterns and strict control of the demand for products involved in deforestation, it would be illusory to seek to stop deforestation. The absolute reduction of certain consumptions (e.g. beef), the selectivity of purchases (guided by information and certification systems), and the abandonment of first generation biofuels (in particular those using palm oil) are major policy priorities.

However, leaving the rules of international trade unchanged would ruin the efforts of committed consumers. Strategies to combat imported deforestation must combine measures banning products involved in illegal deforestation, as the EU is trying to do for timber, and (where deforestation is allowed in third countries) a differentiation of tariffs favouring products certified as “zero deforestation” by internationally recognized standards. The current WTO rules, which do not allow products to be discriminated against based on environmental externalities (in this case, deforestation) related to their production, must be amended. The proceeds of this differentiated taxation, whose revenues are expected to decrease over time, should be fully allocated to support programmes for small producers in the countries of origin. Agribusiness companies will find their own interest in engaging with producers to finance the expected transitions and thus maintain their market share. The “zero deforestation” commitments of major agribusiness firms, particularly soybean buyers, have contributed to reducing deforestation in the Amazon, the most widely publicized biome (Lambin et al. 2018).

Finally, it is the responsibility of states to withdraw from trade agreements with countries that encourage the conversion of forestlands, and to ensure that any new trade agreements contain legally enforceable anti-deforestation clauses.

Notes

- 1 *Sciences & Vie*, November 2019.
- 2 “Community-based conservation institutions and local governance regimes have often been effective, at times even more effective, than formally established protected areas, in preventing habitat loss . . . Several studies have highlighted contributions by indigenous peoples and local communities in limiting deforestation” (p. 22 of the “Summary for Policymakers”).
- 3 “The assessment team shall refrain from making any judgment on domestic policies taken into account in the construction of forest reference emission levels and/or forest reference levels” (Decision 13/CP.19, Warsaw 2014).

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