



## **Latin American Experiences in Natural Forest Management Concessions**



# **Latin American Experiences in Natural Forest Management Concessions**

**Steve Gretzinger**

**Zak Resources**

**Food and Agriculture Organization of the United Nations**

**Rome, 2016**

## **Disclaimer**

The Forestry Policy and Institutions Working Papers report on issues in the work programme of Fao. These working papers do not reflect any official position of FAO. Please refer to the FAO Web site ([www.fao.org/forestry](http://www.fao.org/forestry)) for official information.

The purpose of these papers is to provide early information on ongoing activities and programmes, to facilitate dialogue and to stimulate discussion.

The Forest Economics, Policy and Products Division works in the broad areas of strengthening national institutional capacities, including research, education and extension; forest policies and governance; support to national forest programmes; forests, poverty alleviation and food security; participatory forestry and sustainable livelihoods.

For further information please contact:

For further information, please contact:

Cesar Sabogal

Forestry Officer

Forestry Department, FAO

Viale Delle terme di Caracalla

00153 Rome, Italy

Email: [Cesar.Sabogal@fao.org](mailto:Cesar.Sabogal@fao.org)

Website: [www.fao.org/forestry](http://www.fao.org/forestry)

Comments and feedback are welcome.

For quotation:

FAO.2016. Latin American Experiences in Natural Forest Management Concessions, by, Steve Gretzinger. Forestry Policy and Institutions Working Paper No. 35. Rome.

## Table of Contents

Acronyms.....	iv
Executive Summary .....	1
1. Objectives.....	10
2. Methods .....	10
3. Introduction.....	10
4. Latin American Setting .....	12
5. History of Forest Concession Programs.....	27
6. Operational Details.....	39
7. Relationship to forest policies .....	58
8. Main successes and positive impacts .....	62
9. Main weaknesses and obstacles.....	67
10. Lessons learned and factors for success .....	72
11. Final reflections on the future of concessions.....	79
Annex 1: References .....	81
Annex 2: Summary Table of Latin American Concessions .....	85

## Acronyms

ABT	Forest and Land Authority (Autoridad de Bosques y Tierras - Bolivia)
ARFFS	Regional Forestry and Wildlife Authority (Autoridad Regional Forestal y de Vida Silvestre – Peru)
ASL	Agrupación Social del Lugar (Bolivia)
BPP	Permanent Productive Forests (Bosques de Producción Permanente - BPP Peru)
CARICOM	Caribbean Community and Common Market
CATIE	Tropical Agricultural Center for Research and Education
CEPLAN	National Center for Strategic Planning (Centro Nacional de Planeamiento Estratégico – Peru)
CGFFS	Committee for Forest and Wildlife Management (Peru)
CIFOR	Center for International Forestry Research
CNFP	National Public Forest Cadestral - Brazil
CONAP	National Protected Areas Council (Consejo Nacional de Areas Protegidas - Guatemala)
CSME	Caribbean Single Common Market and Economy
CU	Conservation Unit (Brazil)
DCF	Discounted Cash Flow
EIA	Environmental Impact Assessment
FLONA	National Forest Area (Brazil)
FPDMC	Forest Products Development and Marketing Council (Guyana)
FORESCOM	Community Forest Services Company, Inc. (Empresa Comunitaria de Servicios de Bosque, S.A. – Guatemala)
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GFC-	Guyana Forestry Commission (Guyana)
GFTN	Global Forest and Trade Network
ha	hectares
HKV	Wood Cutting Permit (Suriname)
IADB	Inter-American Development Bank
IBAMA	Brazilian Institute of Environment and Renewable Natural Resources
ICL	Incidental Cutting License (Suriname)
ICMBio	Chico Mendes Biological Institute (Brazil)
IFC	International Finance Corporation
INAB	National Forest Institute (Instituto Nacional de Bosques – Guatemala)
ITTO	International Tropical Timber Organization
LKTS	Lesser Known Timber Species
ITTO	International Tropical Timber Organization
MBR	Maya Biosphere Reserve (Reserva de la Biosfera Maya - Guatemala)
NGO	Non-governmental organization
OSINFOR	Supervisory Entity for Forest and Wildlife Resources (Organismo de Supervisión de los Recursos Forestales y de Fauna Silvestre – Peru)

PEAS	State Projects for Sustainable Settlements (Brazil)
PEAX	State Projects for Agro-extractive Settlements (Brazil)
PEFC	Programme for the Endorsement of Forest Certification
PGMF	General Forest Management Plan (Plan General de Manejo Forestal)
PMFI	Intermediate Forest Management Plan (Plan de Manejo Forestal Intermedio - Peru)
POA	Plan Operativo Anual
RESEX	Extractive Reserve (Brazil)
RDS	Reserves for Sustainable Development
SBCBi	Bolivian Forest Certification and Incentives System
SERFOR	Peruvian Forestry Service (Servicio Nacional Forestal y de Fauna Silvestre – Peru)
SINAFOR	National System of Forestry and Wildlife Management (Sistema Nacional de Gestión Forestal y de Fauna Silvestre – Peru)
SFB	Brazilian Forestry Service (Serviço Florestal Brasileiro - Brazil)
SFP	State Forest Permit (Guyana)
SNUC	National System of Concession Units – Brazil
TCO	Lands of Original Communities (Tierras de Comunidades Originarias – Bolivia)
TFT	Tropical Forest Trust
TRF	Tasa de Regulación Forestal - Bolivia
TSA-	Timber Sale Agreement (Guyana)
UTMFC	Community Forest Management Technical Units (Peru)
VMA	Minimum Annual Value (Brazil)
VRC	Referential Contract Value (Brazil)
WCL	Wood Cutting Lease (Guyana)
WWF	World Wildlife Fund

## Executive Summary

FAO is leading an initiative to improve policies and practices related to concessions on natural production forests in order to sustain forests, build rural economies and improve opportunities for livelihoods. The objectives of this initiative are to:

- positively influence political dialogue at international and regional levels on the role of forest concessions for achieving the aforementioned goals, and
- provide practical guidance on the design, implementation and evaluation of forest concession systems that better respond to their economic, social, institutional and environmental goals.

This report contributes to the above initiative by presenting the results of an extensive, structured analysis of forest concession programs in the six Latin American countries selected for the study: Bolivia, Brazil, Guatemala, Guyana, Peru and Suriname. Forest concessions are subject to criticism even though much of the controversy is due to a small number of high-profile cases that did not deliver the expected benefits. Latin America's experience has been mixed: successes in some countries compare with failures in others, Final verdicts are difficult to make as all countries have evolved, some for the better and some for the worse, but all with valuable lessons that FAO should take into consideration in its work. Consider the following:

- Despite complex socio-economic environments, Guatemala and Bolivia have served as leaders in the social and technical aspects of tropical forestry respectively, setting a high standard for other countries.
- Suriname and Guyana, with low population densities and high forest cover would seem ideal candidates for robust concession programs. Unfortunately, both countries were initially plagued with dissatisfying performance on social issues, and have only recently begun to improve forest access by locals.
- Brazil, despite being a global forestry power, has only recently (and at a slow pace) begun to grant concessions on federal and state lands via a technically complex system based on a balanced sharing of powers between governmental institutions, and a robust informational base.
- Despite strong support from international conservation groups to develop its concession system, Peru struggles to make its ambitious program operative and competitive against illegal logging, and relevant to indigenous communities clamoring for economic opportunities.
- Venezuela, one of the region's first entrants into the world of forest concessions, has regressed dramatically and today, has few functioning operations that comply with the basic principles of sustainable forestry.

This Executive Summary highlights lessons learned from these types of experiences and provides inputs from both positive and negative results from Latin American experiences that FAO could use in the region, as well as in Asia and Africa.



## A. Economic lessons learned

Most countries reviewed as part of this study have robust forest product industries sustained by concession systems that provide consistent volumes of logs, thus generating employment, government revenues and development impacts in under-serviced areas. Log volume from Brazil's state and federal concessions are increasing and concessions in Suriname, Mexico and Guatemala maintain regular volume levels. Up until the recent economic downturn in China that has reduced demand, and the devaluating currency in Brazil that has reduced the price of wood products from this country, Peru's wood production had been accelerating. Prior to a major change in policy, Bolivia had also a stable volume of production from its forest concessions.

Concessions seem to foment the diversification of value-added processing that leads to even greater economic benefits to a country. A range of companies in Bolivia, Brazil, Guatemala and Peru make special dimension or technically sophisticated products to exacting standards for clients and often from a wide range of lesser known species. This has proven particularly true in countries with a moderately robust manufacturing sector prior to concessions. Bolivian sawmills did not start from scratch and embraced the idea of managing forests via a concession model, as did several progressive Guatemalan manufacturers.

Government-funded industry development organizations that support forest concessionaires on market development initiatives have proven to be a useful incentive. These have been set up in recognition of the need for concessionaires to improve their margins by harvesting more volume per hectare or to develop new products from lesser known species. Guyana's FPDMC, Bolivia's CADEFOR and Peru's CITE Madera have all played key roles in testing new species, developing new products, and promoting new technologies.

Strong and well-established concession programs with stable revenue generation due to consistent volumes are recognized by financial institutions and funds as solid investment opportunities. In Guatemala and Peru, state bank, venture capital, pension funds, and strategic investors from all over the world have invested their resources in concessions and at times, even accepting annual harvest plans as collateral for loans.

Despite the above, tropical forest concessions should not be considered a highly profitable endeavor, nor for the faint-of-heart. Experiences in Brazil and Peru in particular have shown that the high costs of long-term investment in forestry make profits difficult to obtain, particularly when competing against informal loggers with lower costs.

## B. Environmental results

Tropical forest management as practiced in concessions has proven to be one of the most effective conservation strategies available to Latin American governments. Guatemala's community model "saved" much of the Maya Biosphere Reserve (MBR) from fires, illegal logging and slash-and-burn agriculture; Bolivia's past industrial model proved that sustainable production is a sound approach to preventing the conversion of forest to agricultural production (i.e. soy beans), and in Peru, forest concession areas have lower deforestation rates than protected areas.

The reason for success is largely attributed to the strong human desire to protect what belongs to one, or what sustains one's economic livelihood. In countries ranging from Mexico to Brazil, concessionaires have shown their commitment to protecting their source of revenue by keeping illegal loggers and land speculators out; essentially playing the role of the state in keeping forest for individuals and companies with formalized access to timber and non-timber products.

In addition to the production areas managed for timber, virtually all concession programs (and particularly FSC<sup>1</sup>-certified operations) include strict preservation zones of unique vegetative communities and habitat. This is done to achieve financial incentives as in the case of Peru, maintain FSC certification as required by the Guatemalan government, or comply with state monitoring requirements as in Bolivia.

### C. Technical issues

Although detractors cite the technical difficulty of managing tropical forests, Bolivia, Guatemala and Mexico (and Brazil to a lesser degree given its more recent entrance into the concession game) have all implemented sustainable forestry on a wide scale in complex tropical forests and often under difficult conditions. Accepted technical tools for ensuring sustainable harvest levels and forest integrity are frequently used, including: forest inventories, pre-harvest censuses, mapping of topographic and hydrological obstacles, marking of seed trees and trees for harvest, reduced impact logging (RIL), and the use of minimum diameter cut levels. The most impressive example of the application of such tools to a real-world setting was Bolivia which for over a decade, had arguably the world's most successful concession program implemented over a large scale and designed by world class experts that bolstered a strong, forest-based economy.

The technical soundness of concession systems in Bolivia, Guatemala and Mexico have been shown by the independent certification of many operations in those countries, either voluntarily or due to governmental obligations. For example, the Mexican government requires ejidos to get certified and pays for costs. Guatemalan concessionaires are required to achieve certification after 3 years but no assistance is provided. Peru offers incentives for obtaining FSC certified status.

Millions of hectares of well-managed, FSC-certified forest concessions have supported wood products industries generating jobs for thousands of rural people with few options, and tax revenues from the export and local sale of processed wood products.

### D. Impacts on local communities

The steady flow of logs and wood products derived from concessions has led to strong forest based economies with a public constituency for forest concessions. The Guatemalan and Mexican examples are particularly impressive in showing how the reliance of the forest products industry on concessions translated into vocal support for keeping forests standing, oftentimes against plans to convert forests to other uses or usurp community rights to their forest.

While some believe that communities are unable to manage tropical forests, Guatemala and Mexico have many examples of communities that profitably harvest trees, mill logs and sell products with

---

<sup>1</sup> Forest Stewardship Council.

their own machinery and in forests belonging to them or under their stewardship. Guyana's Forestry Enterprises and Social Development Program provides a way for communities to secure rights and benefits from their forests. With the exception of Venezuela, Latin American countries are taking major steps to allow for greater benefits to go directly to local communities.

The impacts of forest concessions on communities has been large. Brazilian concessions generate over 6 direct and indirect forestry jobs per 1,000 m<sup>3</sup> of logs harvested. In Brazil's northern Pará State, concessions totaling 176,000 ha will generate US\$ 20 million in revenues as well as 400 jobs, or 50% of all formal jobs in a region characterized by high poverty. In Bolivia, rural families involved in community forestry management benefitted from an average 23% increase in income compared to previous years when engaged in less formal forest-related activities. These communities also invested forestry profits in basic community education, infrastructure and health projects. In Suriname, forestry and wood processing based primarily on concessions, accounted for 2.5% of the country's GDP and provided employment for 4.5% of the entire work force in 2000.

Functioning forest concessions as part of a broader land use plan have become well regarded by community leaders and the general public in Brazil, Guatemala, and Mexico, and have helped increase societal awareness that cutting a tree is not bad as long as it is done within the context of sustainable management. There is little or no opposition to the concept of concessions as practiced by good concessionaires when they contribute to both socio-economic development and reduced deforestation.

A less quantifiable achievement has been the role that concessions have played in building local industry based on individuals that must acquire new skills, become trained, change jobs, and develop new (more optimistic) perspectives. The development of human capital is illustrated by Guatemala where the most successful community concessionaires are now able to engage in sophisticated discussions on export taxes and forest policy. In Peru, indigenous machine operators have been trained and earn higher salaries than traditional unskilled labor positions. Communities that have only recently entered the market economy are now measuring logs, calculating volumes, and monitoring costs.

The deliberate building of human capacity on both an individual and organizational level by public or private entities dedicated to this task has proven critical in Guatemala, Peru, Bolivia, and Mexico. Such organizations play major socio-political and financial roles, and did not exist prior to the initiation of forest concession programs. They developed naturally as needs changed and became more sophisticated.

Workers in Brazil, Peru and Guatemala highlighted that improved safety and working conditions for tree fellers and sawmill operators were considered the most important impacts of well-managed concessions (i.e. protective clothing, improved ventilation, safety equipment, better machinery, first aid training, and regular working hours). In such countries, concessionaires usually ensure that workers have full health coverage, and contract health professionals to attend to staff in forest camps. The widespread use of reduced impact logging in Guyana and Bolivia has reduced the likelihood of injury and protective equipment is now standard in concessions committed to this production system.

#### E. Institutional issues

Landscape level planning that exclude lands of traditional community use, potential conflict and/or high conservation values have ensured that areas chosen for concessions succeed. Brazil has been particularly proactive in land use planning for large, forested regions. Upfront investment in identifying high conflict zones like illegal mining in Itaituba, Brazil or conflicting resource users in Guatemala's Maya Biosphere Reserve have helped ensure that management objectives are not at odds with current resource users.

Having fewer, but larger, areas to monitor improves the efficiencies of agency employees and reduces the focal points of potential illegal logging. A common winning formula has been to form new governmental entities with a modern corporate philosophy led by individuals not tainted with previous involvement in the sector. Bolivia's ABT has taken a unique approach to digital tracking of wood flow that does not sanction errors but rather continues to work with problematic operators to improve their behavior, in part via public embarrassment and lack of access to financial incentives. The inculcating of a proactive and positive philosophy motivates national professionals of prestige to return to governmental service.

Related to the above, the role of inspired and hard-working local professionals or "champions" in building concession programs is a notable success for various Latin American countries. Brazil is the most recent example of how the establishment of a professional governmental institution with clear rules of engagement inspires motivated individuals to change the forestry paradigm. Guatemala, despite rampant violence and instability, was also able to build a cadre of local professionals with sufficient drive and commitment to stopping illegal logging and building an effective concession program.

While some countries such as Venezuela, Suriname and Guyana have historically generated low revenues for governmental coffers, other countries have designed systems to ensure financial sustainability of federal, state and municipal governmental institutions, thus using profits to improve governance. In Brazil, fees collected from federal concessions are distributed to the Municipality (either 20% or 30%) and State (either 20% or 30%) where the concession is located, as well as to a national fund for fomenting forest development (40%). This system is good for ensuring a certain level of financing for vital governmental functions, as well as the overall sector.

## F. General considerations

Experts continually cite land tenure conflicts, violence and weak governments as obstacles to forest management, but both Suriname and Bolivia (and Peru more recently) have successfully implemented good programs to build local economies based on legal forest management that competes with illegal loggers; despite obstacles related to tenure, crime and governments.

Despite the lack of better prices in the marketplace for certified wood, many countries have or had, extensive areas of forests certified by the FSC, particularly Mexico, Guatemala and at one point, Bolivia, and some unique approaches to entering niche markets with corresponding high prices for FSC-certified, non-commodity products.

State-run concessions are rare, but native forests managed as such by private owners are even more uncommon. No governments have privatized national forests; most tend to grant long-term access

to a geographically defined forest via a structured process to manufacturers, individual loggers or associations, communities or even non-profit organizations.

While some progress has occurred on ecotourism and Non-Timber Forest Products (NTFPs), these are still exceptions rather than the rule, and are mainly located in Brazil. This is due in part to the fact that one cannot easily link the forest to the trees with non-timber products particularly when there are diffuse user arrangements. The ready markets for wood and more widespread experience with wood products makes timber a more feasible economic driver around which to frame concessions.

## G. Weaknesses

If there is one common theme across all countries and requested from all interviewees, it is that governments need to dramatically reduce the flow of illegal wood that depresses markets and lowers prices. Companies in Peru and Bolivia are focusing harvest efforts on native and community forests where requirements are less stringent, costs lower and supervision by the government much laxer than in the concession model. Wood from communities in these countries now dominates the supply and competes unfairly with concessionaires. Unfair competition is still the largest economic obstacle facing concessionaires around Latin America.

Despite being governmental property with clearly defined user rights, few governments have the appetite for removing illegal occupants (loggers, farmers, families) from federal or state concessions even when they have the legal right to do so. This is a huge issue since concessionaires invest in an area with the thought that the government will indeed look out for their mutual interests and remove invaders. Many expired concessions in Bolivia, Guyana, Peru and Suriname are not being managed, and subject to illegal logging or converted to agriculture. Few countries have functioning procedures to pass rescinded concessions to new owners.

Overall, there is still a lack of interest by banks and financial institutions in allocating resources to natural forest management concessions. Business support for both communities and companies is usually minimal in the beginning precisely when key decisions are being made and financial astuteness is most critical. For these and other reasons, many concessions are not doing well financially; they simply do not have the requisite business skills to manage a company under challenging climatic, financial and risk conditions.

Economies of scale dictate that larger areas with sufficient capital are needed to make concessions economically viable. The classic problem of low volumes per hectare is noted in most countries but misses the point: it is less a question of how many m<sup>3</sup>/ha are available but more an issue of how much US\$/ha is generated in profit, particularly in relation to operating costs influenced by road and river access.

Economic returns in countries such as Brazil and Peru have been much less than expected, due in large part to poor inventories and higher than anticipated costs. Reducing the cost and increasing the reliability of forest inventories is a pressing technical need since all subsequent investment decisions start with the amount of available volume.

It is surprising that given widespread forest certification and concern about indigenous rights, some countries have been so slow to incorporate community and social issues into forest policies. Some countries are advancing slowly (i.e. Peru) or regressing (i.e. Nicaragua). Bolivia allows easy access to forests for communities but without support. Formal forest management requires that communities become organized and efficient, but with the exception of Mexico and Guatemala, there is a low rate of uptake in most countries, and more explicit tools are needed. Despite the belief that donor organizations keep “inefficient” operations afloat, there are actually inadequate programs for small operators. With the exception of Brazil, social impact assessments are rare in forest concessions.

Silvicultural treatments are usually based on polycyclic systems whereby minimum diameter limits are established assuming that smaller diameter trees will enter a harvestable size class by the end of the cutting cycle. While conceptually reasonable, this approach requires site-specific growth and yield data to adjust projections, and does not account for shade or light preferences of particular species. In none of the reviewed cases are concessionaires implementing treatments designed to meet regeneration requirements of commercial species. There are no examples where silviculture has been implanted on an operational basis over an extended period (i.e. large disturbances for light-loving species, liberation thinning for smaller, shade-loving species).

## H. Ingredients for success

The main ingredients that countries would seem to need in place for a successful forest concession program based on the Latin American experience are highlighted in this section.

### 1. General

- The granting of a particular area of forest to a private company by the federal government foments long-term investment by the concessionaire who knows that they will reap the benefits of capital improvements over an extended period. This runs counter to the normal attitude and perverse incentive of short term harvest permits and is crucial for building an economic constituency for standing forests.
- Time, lots of money and consistency are the unheralded and seldom mentioned harbingers of success for developing forest concessions. A sound concession program cannot be built in a several years without adequate finance.
- Given the multivariate nature of forestry, improvements in concession systems must be implemented at a large scale, with strong technical support, and a focus on the oftentimes forgotten social and financial aspects.
- Experienced professionals with production or private-sector experience should be involved and allowed to cross-disseminate ideas and methods with room for trial and error to adjust and apply proven techniques.
- Participation by local and international non-profit organizations to promote the good, expose the bad, and channel technical guidance and funds.
- When concession management is part of a broader strategy with a multi-pronged approach by the government, success is likely and impacts in stabilizing immigration, forest conversion and land-holdings are high.

## 2. Concession design

- Transparent systems should be built that do not propagate the feeling that favoritism and under-the-table payments were the reasons why someone received a particular concession.
- Pragmatic concession design with consistent and coherent governmental support that protects the right of the concessionaire.
- Determining the appropriate forest size should not be an arbitrary nor purely technical decision but rather must be based on a complete financial analysis with accurate cost and revenue information.
- Evidence shows the importance of resolving or minimizing conflicts between users prior to establishing concession boundaries; in the long run, it is much cheaper to establish a clean and low-conflict concession area up-front.
- Since effective concession areas are seldom as large as one might think, it is useful to start with a large planning area to work within.
- Rather than being an afterthought, governments should include the management, harvest and trade of non-timber products as a complementary part of their programs. Simply allowing others to harvest such products, or not addressing in annual operating plans, is not sufficiently proactive.
- Given the desire and need to generate high revenues from concessions, governments should widely publicize concessions that are up for bid and ensure a competitive process that usually results in higher prices.
- Establishing concession fees based on area rather than volume is one way that governments can at least reduce the cost of harvesting low margin species and incentivize their commercialization.
- When it comes to concessions, simpler pricing approaches that do not allow for corruption by officials to obtain illegal payoffs seem better than more complex approaches that depend on lots of information that cannot be corroborated.
- At the same time, the price charged should be established via a clear method in order to rebuke charges that low prices were provided to favor large companies.
- Concession pricing mechanisms should incorporate real costs from similar operations that include all expenses related to a concessionaire and analyzed from a discounted cash flow approach rather than simply stumpage.
- Production-based fees should be based in part on prices paid for certain species of commercial interest, these should be derived on an individual species level (or similarly priced groupings).
- Fees based on market prices should ensure that the species are truly commercial and that the prices are from the specific region where the wood is commonly sold.
- Flexible contracts that allow for justifiable changes and for periods longer than the traditional 20-25 year cutting cycles would increase the appetite for companies to bid on concessions.

## 3. Technical

- Forest inventories and censuses should focus on commercial species likely to be harvested rather than low value species or those with no market potential. Concessionaires should be able to visit forests and conduct their own supplemental inventories prior to bidding.
- Succinct management plans that clearly summarize inventory data, justify cutting cycles and harvest levels, offer realistic financial projections and present operational related information would be a dramatic improvement over the current situation of plans that do not provide practical information related to a concession's success.
- Concessions require more than management plans; successful programs develop clear technical guidelines, manuals, procedures and reports that foster both consistency in approaches, efficient monitoring and structured reporting.

#### 4. Economic

- Concessionaires must obtain sufficient profits to be able to compete with illegal and informal supplies of wood in the marketplace.
- Such profits must lead to visible and quantifiable benefits to locals in the form of direct and indirect jobs, sales to export and local markets, and tax revenues distributed to local governments from both the forestry and manufacturing.
- Vertically-integrated concessions linked to experienced manufacturing facilities are the most likely to succeed since a secure supply of wood allows the company to experiment with species, products and markets, and produce raw materials at a competitive cost.
- The main incentive to any forest concession program would be the reduction in illegally produced wood with lower cost structures that do not allow concessions to compete well.
- Costs to concessionaires, in terms of time to approve permits or actual fees charged, must be reasonable in order for a concession program to work. At the same time, governments must show a willingness to modify procedures, payment structures and costs once they realize that they are onerous or expensive. Efficient processes are an incentive that governments can offer bidders.
- Incentives in the form of tax breaks, fee reductions and subsidies have been successful in reducing the cost of operating a concession and improving the likelihood of profitability.
- A pragmatic approach to stimulating investments in concessions would be for the government to share the costs of road-building which are the largest capital expenditure that a concessionaire needs to assume (and which in many cases represents a public infrastructure used by state officials and local communities).

#### 5. Institutional

- There have been varying degrees of success with local governments and their involvement in concession processes. For state, regional and municipal governments to be able to play a substantive role, clear and logical objectives and installed capacity must be built.
- Governments need to ensure adequate financial resources from not only concession rights and production taxes, but also from the general budget to cover the costs of running a concession program.



- Greater autonomy for agencies helps increase the rate of processing and granting concessions. In several cases, a relatively autonomous governmental body with new, motivated and politically strong leadership with the authority and budget to make significant changes was key to changing the way forest resources were managed.
- There are no examples where a unilateral, hardline approach to stopping forest conversion has ever achieved its objectives. What does work is a combination of the carrot and stick approach whereby concessionaires deal with an efficient governmental entity that can also enforce lack of compliance. Governments should work as partners with concessionaires, not simply as a police force.

## 1. Objectives

The objective of this report is to assist FAO in improving policies and technical practices related to natural forest concessions. The report summarizes the status of forest concessions for timber production, and to a lesser degree, non-timber forest products (NTFPs), conservation, restoration and ecotourism as relevant in Bolivia, Brazil, Guatemala, Guyana, Peru and Surinam.

## 2. Methods

An extensive series of documents was reviewed to obtain up-to-date and historical perspective on the status of concessions in the various countries (see Annex A). These included government documents (i.e. laws, regulations and status reports), private planning documents (i.e. management plans, financial statements and projections), internet information (governmental and non-profit organizations), telephone calls, face-to-face interviews, and email communication with individuals engaged in forest concessions from the private, governmental and non-profit perspectives.

Field visits were made to Guatemala (Guatemala City, Flores, Melchor de Mencos), Peru (Lima, Pucallpa, Atalaya), and Mexico (México City). Although not a primary focus of this research, the experiences of Mexico and Venezuela were briefly reviewed due to their long history of forest management conducted by two very different implementers: small communities and large companies.

## 3. Introduction

Most academics repeat a litany of similar obstacles threatening the viability of concessions: lack of land tenure, inadequate attention to communities, minimal access to capital, corruption, and limited access to information. While these are all important, they detract one's attention from a core issue underlying why the management of tropical forests via concessions has been only marginally successful:

Wood products derived from forest concessions cost much more to produce than products sourced from informal, unsustainable, or illegal logging and do not generate a sufficient risk-adjusted return for the entrepreneur.

In most cases, the economically wise decision is to engage in short-term harvests with minimum costs. From a business perspective, sustainable forestry is often much less profitable and a riskier investment than traditional logging. This report shows how governments, non-governmental organizations (NGOs), companies and communities have collaborated to reduce risk and increased the profitability of long-term concessions so that forest cover is maintained and economies strengthened. Where governments have not been entirely successful, this report will show the reasons for lack of progress, and how lessons learned can be utilized to a good end.

The last 10-15 years have been characterized by significant reforms and progress in Latin America. Despite similar cultures and language, the different concession programs have been anything but uniform in either design or results:

- In 1996, Bolivia passed one of the most progressive, innovative and impacting forestry laws in Latin America, and established an independent entity to manage an aggressive concession program based on sound technical principles. As a result, at one time, Bolivia had the largest area of independently certified, industry-managed tropical forest in the world. Due to radical shifts in the government's forest policies, these concessions have been dramatically reduced and will not be granted in the future. Concessions once belonging to companies are being given to communities. The newly established Forest and Land Authority (Autoridad de Bosques y Tierras in Spanish or ABT) has taken its role in reducing illegal logging and bringing communities into the wood business seriously and has made fundamental changes.
- Brazil is unusual in that despite having a major forest resource (the largest tropical forest in the world) and a strong forest products industry, it has been slow in getting its federal concession program up and running. Brazil is also unique in having state concession programs in Pará and Acre that are increasing in area. Federal and state forestry agencies now manage concessions on that small part of the Amazon allocated for production forestry (< 2%) in order to support rural economies and provide raw materials to the wood products industry. Although the federal program is characterized by great complexity due to the involvement of three separate federal agencies, Brazil's forestry service (Serviço Florestal Brasileiro in Portuguese - SFB) has shown a willingness to adjust its procedures. As a result of this adaptability, considerable public consultation and technically solid land-use planning, Brazil's industrial concessions are beginning to play a key role in the government's conservation and development plan for the Amazon.
- The small, complex and politically volatile country of Guatemala has been at the forefront of the community forestry movement. Guatemala passed a new protected area law and established a new park service in the early 1990's. This led to a forest concession program pioneered in the Maya Biosphere Reserve (MBR) in the mid 1990's that allowed the country to reduce deforestation and make huge improvements in the ability of rural communities to proactively engage in forest-based business. State-owned forests have been designated for the production of both timber and non-timber products and are accessed via concessions granted to communities and industrial companies. It is one of the few countries in the world where communities are able to bid on concessions under a regime different from that of industrial operations, and in fact, are now the dominant category of concession-holder.
- Due to economic necessity, in 1987 Guyana began liberalizing its policies and opened its forest resource to investment by foreign companies allocating 2.4 million hectares (ha) for logging through different mechanisms. Low population pressures, high forest cover, and unique,

commercially valuable species allowed Guyana to implement a fast, massive and opaque concession program. In 1997, Guyana's permanent forest estate covered almost 9 million ha of which 6.5 million ha had been granted as concessions (van der Hout, 1999). Today, Asian investors control almost 80% of the country's large forestry concessions, equivalent to 1/3 of the almost 16 million ha of state-owned, public forests (Bulkan, 2014). Guyana is changing and has taken a giant step to providing access to remote communities that now manage almost 500,000 ha of forest and generate almost US\$ 9 million in annual revenues (GFC, 2015).

- Mexico's impressive community forestry model is worthy of a deep analysis of its own but has deliberately steered away from concessions and focused on building a cooperative (or ejido) based model. While concrete figures are hard to come by, estimates on the number of Mexican forest communities range from 7,000 to over 9,000 (Bray et al., 2005). While this model is a unique artifact of the Mexican socio-political history, it does prove that small, rural communities are able to successfully run forestry enterprises if given the appropriate type of support from their respective governments.
- On paper, Peru has a robust concession program in terms of area; however, this country's experience has been frustrating and characterized by many inoperative and failed concessions, some legitimate concessionaires struggling against high operational costs and low prices for their products. Although the government is slowly beginning to reign in illegal logging, the Peruvian market is still flooded with cheaply produced wood, often from community operations that have significantly lower requirements than concessions. Only a very few, vertically integrated companies are achieving moderate success through their concessions and several high-profile, large, FSC-certified companies have gone broke.
- Suriname initiated its concession program by proactively soliciting Asian investors to obtain large concessions to pump much-needed financial resources into its troubled economy in the early 1990's. After many years of forest practices that did not meet international standards, the country can now lay claim to a large area of FSC-certified companies, at both the forest management and wood processing level.

A summary comparison table of forest concessions in the seven Latin American countries studied is presented in Annex 2.

## 4. Latin American Setting

### A. Forest land status

Bolivia established natural forest management concessions in that country's lowlands including the Amazon with most of the country's forest (22.2 million ha) and the drier, rougher and rockier terrain of the Chiquitana region (7.5 million ha). The Chaco (10.1 million ha) and Andina (13.7 million ha) regions are not apt for concessions. Timber plantations comprise a relatively small part of Bolivia's landscape and forest products sector. According to the Tropical Forest Trust (no date) and based on data provided by the International Tropical Timber Organization (ITTO), in 2005 Bolivia had only 60,000 ha of plantations and primarily in the higher Andean regions.

According to direct interviews with World Wildlife Fund (WWF) staff working on forest sector issues in Bolivia, in 2015 the country had a total forest area of 53.5 million ha (48% of the country) of which 17.1 are public lands available for forest management, and 8.9 million ha with approved forest management plans (over ¼ of all public forest land)<sup>2</sup>. At present, only 2.1 million ha are in concessions as illustrated below (Table 1):

Table 1. Current Forest Use in Bolivia by Management Regime, Area, and Percentage

Management Regime	Area (hectares/%)
Indigenous communities	3,143,035 ha (35%)
Ex-concessions	2,107,726 ha (24%)
Private ownership	1,540,486 ha (17%)
Communities (Non-indigenous)	1,522,476 ha (17%)
Non-community / social holdings	477,365 ha (5%)
Research	163,611 ha (2%)
Total Area	8,954,699 ha (100%)

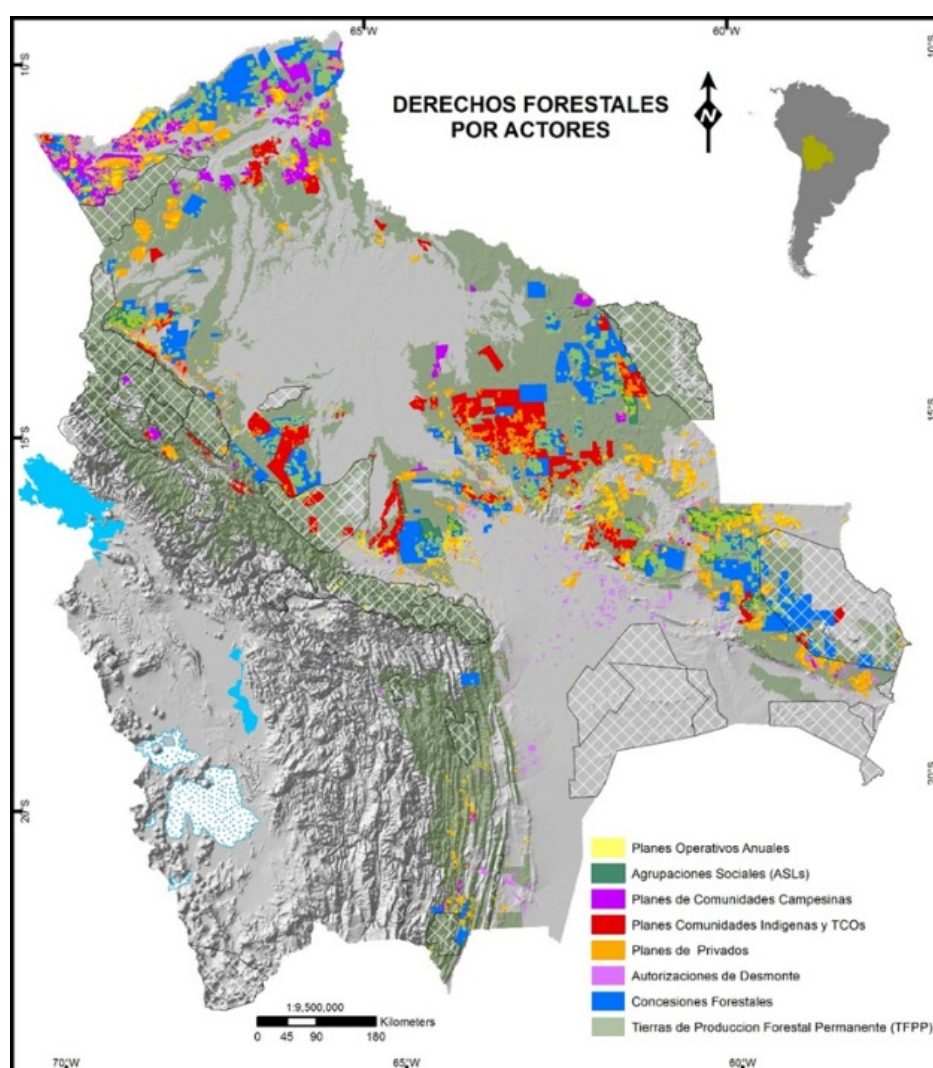
(Source: Carreras, 2015)

Whereas less than 5 years ago, Bolivia had 42% of its production forest in industrial concessions (with an average size of 73,215 has), it now has only 24% in such tenure. As will be explained further, the government no longer uses the concession model per se, and refers to these lands as “ex-concessions”. Previously, communities only had formalized access to 37% of the production forest (with an average area of 16,721 ha). Communities now hold 57% of the production forest (Carreras, 2015). These figures show the success of the government’s policy favoring community management of forest resources. Private holdings and research forests have stayed roughly the same. Short-term harvest permits that were frequently for large areas are no longer occurring.

---

<sup>2</sup> In percentage terms, this is very similar to Guatemala with has a total of 3.7 million ha of forest of which 1.5 million ha are public lands and 450,000 ha allocated to concessions (29%). By comparison, only 2% of Brazil’s Amazon has been allocated to forest production.

**Map 1. Forest use by different participants in Bolivia**



Code	Forest Rights by Actor
	Industrial Annual Operating Plans
	Non-Indigenous Community Operating Plans (ASL)
	Farmer Community Plans
	Indigenous Community Plans (TCO)
	Private Landowner Plans
	Forest Clearing Permits
	Forest Concessions
	Permanent Production Forests

(Source: WWF, 2015)

Brazil has a total forest area of almost 463 million ha of which 310 million ha are public lands. In 2015, 1.3 million ha of federal and state public lands were concession (0.4% of all public lands) (NRPF, 2015). The area of Brazil utilized for natural forest concessions is the legally designated Amazon region comprised of all seven states of the North Region (Acre, Amapá, Amazonas, Pará,

Rondônia, Roraima and Tocantins), as well as part of Mato Grosso in the Center-West Region and most of Maranhão in the Northeast Region.

**Map 2. Brazilian States belonging to the Legal Amazon**



Through 2015, the majority of forest in the Brazilian Amazon was held by indigenous and non-indigenous communities (47% or > 145 million ha) with slightly less (46% or < 144 million ha) managed by federal and state governments, of which less than 1,350,000 ha were managed as forest concessions (< 1%)<sup>3</sup>. The Brazilian Forest Service (SFB) reports that a total of 840,000 ha of federal lands have been granted as concessions (Table 2).

Federal forest concessions in Brazil are located in five main national forest areas (referred to as FLONAS) including: Jamari (Rondonia State), Saraca-Taquera (Pará State), Jacunda (Rondonia State), Altamira (Pará State), and Crepori (Pará State) .

State concessions are similar to federal concessions in most aspects but are granted and managed by state government rather than federal. In 2012, the majority of the state concessions were located in the State of Pará which had 215,000 ha under concession with an average size of 50,000 ha.

**Table 2. Land usage and concessions of Public Forest in Brazil (2015)**

Type	Percent	Area (ha)
Indigenous Forests	36,03%	111,940,181
Non Indigenous Community Forest (Traditional Settlements)	13,24%	41,152,218
Military Areas	0,90%	2,804,076
Other Designated Federal Forests	16,20%	50,321,007
Other Designated State Forests	10,47%	32,542,450
Other Designated Municipality Forests	0,09%	278,043
Non Designated Forests	23,07%	71,666,849
<b>Total Public Forests</b>	<b>100%</b>	<b>310,704,824</b>

Source: NRPF, 2015

<sup>3</sup> Only 2% of Brazil's Amazon forest has been allocated to production or approximately 20 million has (STCP, 2014).

Concessions	Area (ha)
Federal	842,000
State	477,000
Total Public Forests	1,319,000

Source: NRPF, 2015

Guatemala has a total of 3.7 million ha of forest of which 1.5 million ha are public lands and approximately 450,000 ha allocated to concessions (29% of public forest lands). The region utilized for natural forest management concessions is Petén, the country's northernmost department. The concessions have been granted in the 2.1 million ha Maya Biosphere Reserve (MBR) established in 1990 as Guatemala's first unit of the International Network of Biosphere Reserves.

The MBR includes 747,800 ha under strict protection, 864,300 ha destined for multiple use including concessions, and 487,900 ha of private holdings in the buffer zone. Decree 5-90 assigned administration of the MBR to the Consejo Nacional de Areas Protegidas (CONAP) which had been established earlier in 1989 under Decree 4-89. The vast majority of the country's natural forest concessions are located within the Multiple Use Zone of the MBR. Despite canceling three community concessions due to farming pressure over small areas with low economic potential and drug traffickers, the system functions on 485,122 ha (91%) of the 533,045 ha granted as shown in Table 3.

The majority of Guyana's forestry industry is located in the Pre-Cambrian, Lowland Region of low hills covered by tropical rainforest on clayey and loamy soils (van der Hout, 1999). In 1999, 80% of Guyana (16.8 million ha) was covered by largely untouched forest (logging had concentrated in the areas close to roads and bodies of water) and its permanent forest estate was 8.9 million ha. Ten years later, in 2010, FAO estimated that the country's natural forests had dropped to 15.2 million ha representing 71% of the country's total land area of 21.5 million ha (itto.int. 2015). There are many conflicting figures on this most basic issue: area of forests. In this report, "middle-of-the road" values are used rather than those proposed by biased entities. In 1987, the government allocated 2.4 million ha for logging on these lands, and by 1996, 6.5 million ha under different modalities (to be described later). Map 3 shows the large extent by which forest concessions dominate the landscape in Guyana reaching a total of approximately 43% of the permanent forest estate.

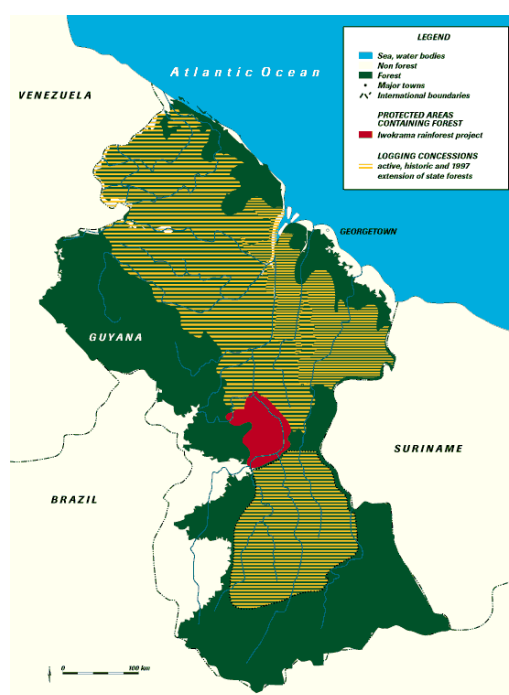
**Table 3. Forest concessions in Guatemala's Maya Biosphere Reserve (2013)**

No.	Tipo de unidad	Unidad de Manejo	Adjudicatario	Area total (ha)	Estado actual
1	Concesiones comunitarias	Río Chanchic	S.C. Impulsores Suchitecos	12,218	Activa
2		Chosquitán	S.C. Laborantes del bosque	19,390	Activa
3		La Unión	S.C. Custodios de la Selva	21,176	Activa
4		Yaloch	S.C. El Esfuerzo	25,386	Activa
5		Uaxactún	S.C. OMYC	83,558	Activa
6		Las Ventanas	S.C. Arbol Verde	64,973	Activa
7		San Andrés	Asociación AFISAP	51,940	Activa
8		Carmelita	Cooperativa Carmelita	53,797	Activa
9		Cruce a La Colorada	Asociación AFICC	20,469	Activa
				<b>352,907</b>	
10	Concesiones industriales	Paxban	GIBOR, S.A.	65,755	Activa
11		La Gloria	Baren Comercial Ltda.	66,460	Activa
				<b>132,215</b>	
12	Concesiones comunitarias	La Pasadita	Asociación de prod. La Pasadita	18,817	Cancelada
13		San Miguel	Asociación de prod. San Miguel La Palotada	7,039	Cancelada
14		La Colorada	Asociación Forestal Integral La Colorada	22,067	Cancelada
				<b>47,923</b>	
			<b>TOTAL CONCESIONADO</b>	<b>533,045</b>	

Fuente: Proyecto CNCG-RA, 2013

(Source: Morales, 2014)

**Map 3. Forest Concessions and Land Uses in Guyana**



(Source: forestmonitor.org)

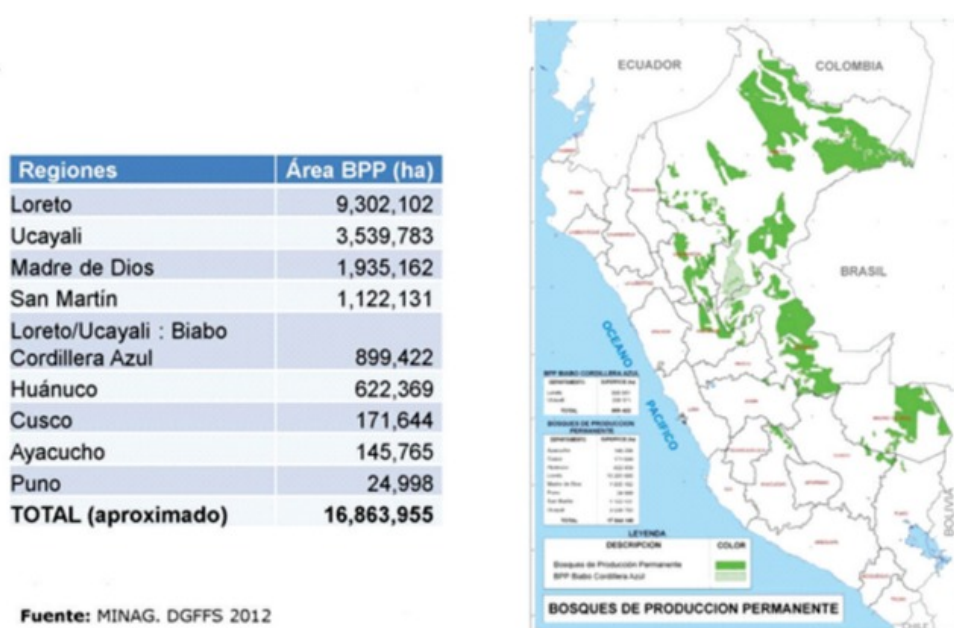
In the first years of the 21<sup>st</sup> Century, Peru claimed almost 68 million ha of forest of which almost 19 million ha were public lands and 5.5 million ha public lands under concession (29%). Over 52 million ha of forest are classified as protected areas, indigenous reserves, private lands and other types of



(non-timber) concessions where timber or forest management is not a priority. National forest allocated for wood production (known as Bosques de Producción Permanente in Spanish or BPP) has been established by the Ministry of Agriculture and is accessed via concessions granted to private investors.

Most BPPs available for concessions are in Loreto with over 9 million ha (FAST, 2014). The Department of Ucayali has approximately 3.5 million ha (more than a third of Loreto). Madre de Dios, despite being the Department with arguably the most profitable concessions, has barely 2 million ha available as permanent production forests.

**Map 4. Permanent production forests in Peru**

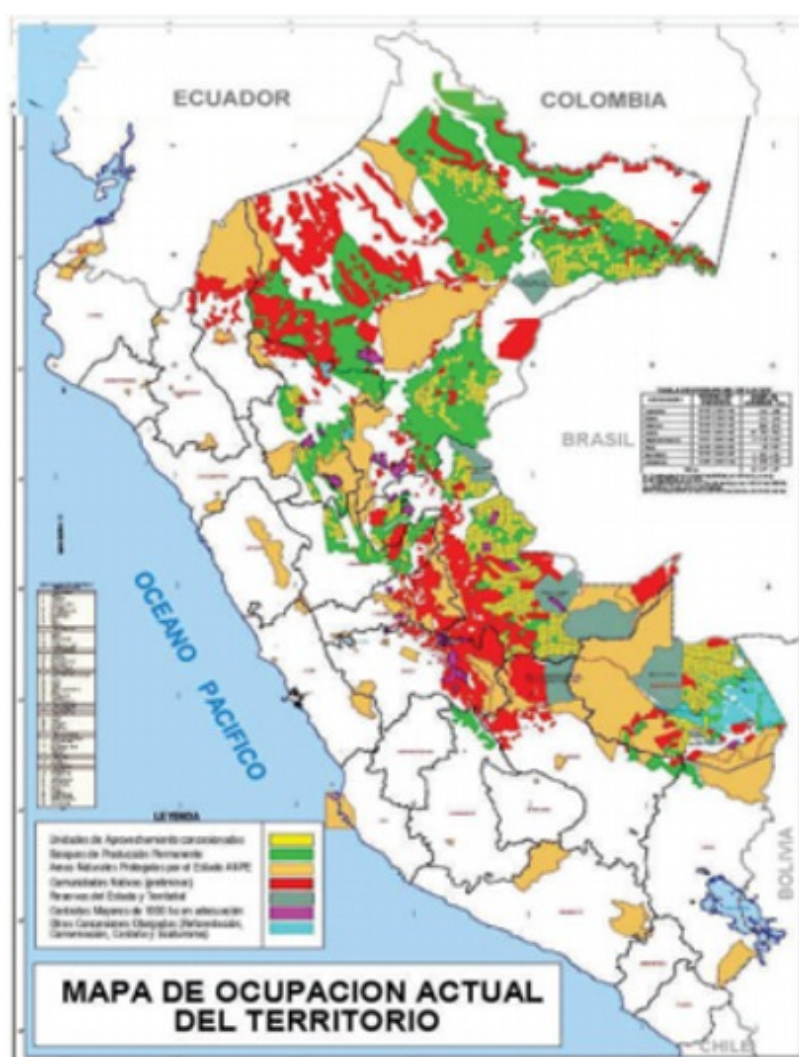


(Source: MINAG (Peruvian Government), 2012)

By 2011, the total area of BPP in Peru reached 16.9 million ha equivalent to only 30% of Peru's forest estate. From 2002-2004, and with some additions through 2008, Peru signed 605 concessions covering 7.11 million ha Ucayali, Loreto, Madre de Dios, San Martín and Huánuco. The remaining 9.8 million ha of BPP which could be concessions have not been legally assigned, but in many cases are being logged or otherwise used. Map 5 and accompanying figures illustrate that a small percentage of the total forest area in the Peruvian Amazon is occupied by concessions.

At roughly 550,000 inhabitants (www.countrymeters.com, 2015), Suriname has an even lower population than Guyana and virtually an undisturbed forest landscape most of which is covered by the mesophytic moist forest type characteristic of the Guyana Shield (ITTO, 2015). Two other major forest ecosystems are the northern coastal swamp, mangrove and ridge/marsh forests and a drier savannah forest type. The country has a deforestation rate of close to zero, experiences little immigration and overall is not subject to major forest conversion pressures. By 2005, of its 14 million ha of forest area, roughly 1 million ha had been granted to forest concessionaires (ITTO, 2005).

**Map 5. Forest use in the Peruvian Amazon**



Code	Forest Rights by Actor	%
	Production Forest - No concessions	14%
	Production Forest - Concessions	10%
	National Protected Areas	32%
	Indigenous Communities	20%
	Private and un-classified land	16%
	Indigenous Reserves	4%
	Other (non-timber) concessions	3%
	Various contracts	1%

(Source: DGFFS, 2013)

Venezuela's main forested area lies outside of the northern coastal plain and the Andean region in the large Orinoco and Amazon River basins. The states of Bolivar and Amazonas cover almost half of the country's land mass and in 2005 (ITTO) contained 70% of its forests. Deforestation has been high in Bolivar state, threatening the main area of the country for forest development. In 2005, Venezuela had 13,000,000 ha dedicated to production forests, 20,600 ha as protection forests, and 863,000 ha in plantations for a total of almost 34.5 million ha.

#### B. Harvest levels in forest concessions

Log production levels from forest concessions have been dramatically lowered in Bolivia since industrial concessions were reduced and more under-capitalized, inexperienced communities are now involved in logging. Recent records show that 85% of the country's production forest is in community hands and much of the country's wood is now coming from these areas (official volumes are unavailable).

Brazil has relatively high commercial volumes for the Amazon (over 13.5 m<sup>3</sup>/ha whereas Peru and Bolivia operations usually average under 10 m<sup>3</sup>/ha) and a correspondingly high production. In 2012 and 2013, the total log production from the 112,200 ha of federal concessions in the Jamari and Saraca-Taquera blocks remained stable at slightly under 50 thousand m<sup>3</sup> despite a moderate increase in harvest area (SFB, July 2014).

Total log production from natural forests with harvest permits issued under a series of mechanisms (concessions, small harvest permits, land clearing, etc. in the Brazilian Amazon in 2012 was 13.5 million m<sup>3</sup> (SFB, May 2014). To gain perspective on the magnitude of Brazil's timber industry, note that in 2013, Brazil exported wood products worth US\$ 435.7 million comprised as follows (SFB, May 2014):

- Processed wood products: US\$ 218.5 million
- Lumber: US\$ 155.1 million
- Particleboard: US\$ 46.6 million
- Fiberboard: US\$ 7.8 million
- Plywood: US\$ 7.7 million

The majority of these exports went to the U.S. (US\$ 129.7 million) with France (US\$ 56 million) and Japan (US\$ 45.4 million) in a distant second and third place, respectively. The average value of logs increased from roughly US\$ 30/m<sup>3</sup> in 2003 to US\$ 120/m<sup>3</sup> in 2011 (SFB, May 2014).

In Guatemala, assuming an average 25 year cutting cycle, approximately 19,404 ha of the 485,122 ha of concessions are harvested annually. Table 4 shows the number of harvests by each concession over the period for which each has been functioning. No other Latin America country has community concessions with such a long track record of harvests (although Mexico's ejidos have been operating for much longer).

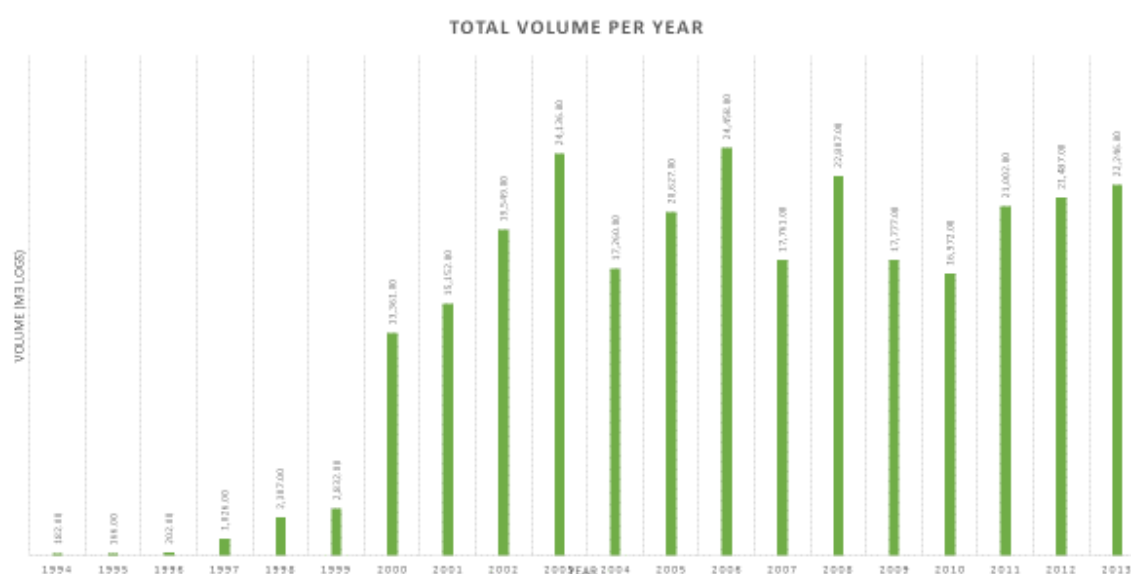
As one can see in Figure 1, wood production from Guatemala's concessions has been growing steadily to over 20,000 m<sup>3</sup> per year. While mahogany volumes make up the bulk of annual production with approximately 11,000 m<sup>3</sup>, the remaining volumes are comprised of santa maria (5,200 m<sup>3</sup>), and pucte and manchiche which together average almost 5,000 m<sup>3</sup>.

**Table 4. Number of Annual Harvests Completed by Concessionaire in Guatemala's Maya Biosphere Reserve (MBR) through 2013**

Concessionaire	Number of Harvests
Rio Chanchich	15
Chosquitan	14
La Union	13
Yaloch	12
Uaxactun	14
Las Ventanas	14
San Andres	14
Carmelita	16
Cruce a la Colorada	13
Paxban (Industrial)	14
La Gloria (Industrial)	14

(Source: Morales, 2014)

**Figure 1. Log Production in Guatemala's Forest Concessions (1994-2013)**



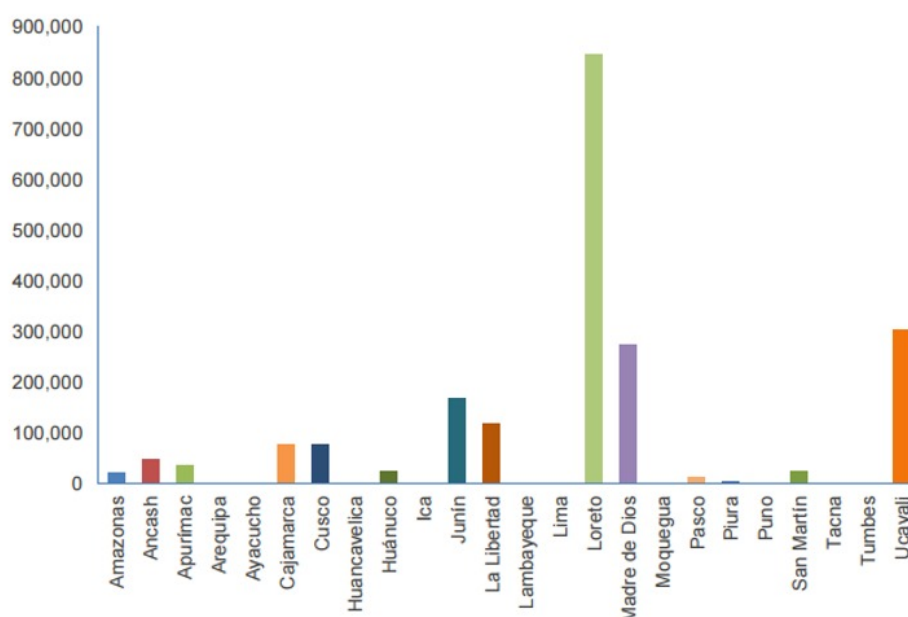
(Source: CONAP, 2015)

In Guyana, annual log production from 1981 to 1992 was 160,000 m<sup>3</sup>. This increased to 220,000 m<sup>3</sup> in 1993 and 520,000 m<sup>3</sup> in 1997. Greenheart occupied more than 40% of logging volumes through 1990 and up to 70% of the 40,000 m<sup>3</sup> of products exported of this species (28,000 m<sup>3</sup>) during the same period. Exports began increasing in the early 1990s when Barama, a Samling-owned company, established a plywood, decking and hardwood lumber mill in Northwestern Guyana. Barama

introduced baromalli into the marketplace via plywood products and log production grew to 520,000 m<sup>3</sup> annually.

Figure 2 illustrates where most log volumes are produced in Peru. Loreto has fewer concessions than Ucayali and Madre de Dios, but the greatest volume (most are low-value, “floating” species which can be harvested without high capital expenditure costs due to road construction but rather via river transport)<sup>4</sup>.

**Figure 2. Log Production (m<sup>3</sup>) by Department in Peru (2014)**



(Source: DGFFS, 2014)

Suriname’s annual wood production increased from 1997 to 1999 as follows: logs from 183 to 250,000 m<sup>3</sup>; lumber from 41 to 50,000 m<sup>3</sup>; and plywood from 7,800 to 8,000 m<sup>3</sup>. Since the year 2000, log production has been stable at roughly 160,000 m<sup>3</sup> annually. In 1995, log and lumber exports were US\$ 495,000 and US\$ 1.9 million respectively (ITTO, 1995).

According to ITTO (2005), as Venezuela’s plantation area has increased, production from tropical forests has dropped from 55% in 1993 to 40% in 2000. Almost all of Venezuela’s wood production is for local use, and volumes are decreasing as illustrated below:

- 1999: 1.7 million m<sup>3</sup> in logs (conifers accounted for 910,000 m<sup>3</sup>)
- 2003: 1.1 million m<sup>3</sup> in logs (conifers accounted for 638,000 m<sup>3</sup>)

<sup>4</sup> Peruvian concessionaires can obtain permission to move leftover volumes from previous harvests that were unable to be transported due to inclement weather or mechanical problems. Concessionaires can also re-enter a previous harvest area to finalize the cut by felling and transporting logs that it was unable to complete (this can occur twice over 5 years).

### C. Legal framework

The legal precedent for a forest concession is fairly standard and used by most Latin American governments to grant rights over certain public goods or to authorize an entity to provide certain services derived from public resources. The legal basis behind the concession granting process is essentially the same for forest as well as subterranean (or other) public resources, and generally follow the following steps:

- Develop bidding documents
- Provide public notification that the state is interest in granting concession via official publication
- Establish reviewing body
- Receive bids
- Evaluate bids by reviewing body (legal, administrative, forestry, technical)
- Make decision and negotiate terms
- Award concession
- Obtain bond payments
- Develop and sign contract
- Finalize approval

While this concession granting process is essentially standard (for forests as well as other state-owned assets), not all countries use the same approach, and developments of the legal frameworks behind concession models are quite different depending on the country. In most contracts however, specific mention is made of the need to comply with national standards on: inventory techniques, management plan development, reduced impact logging techniques and other performance-based measures.

Bolivia adopted a classic approach to transforming its forest concession program. Harvest contracts were the simple approach to granting access to forest used from 1974 to 1995. In 1996, after considerable discussion and inputs from international experts, Bolivian Law 1.700/1996 was approved, establishing the forest concession as a way for government to grant exclusive for timber and non-timber rights from a specific area to a private entity. This right is accompanied by obligations. The program was highly successful, reaching a large amount of FSC-certified forest management concessions: the highest in the world at that time. In 2010, however, Bolivia passed Decree #726/2010 prohibiting new concessions. While the government would not rescind current concessions, it would allow them to expire at the end of their contractual period.

While not exactly the same as traditional industrial concessions, the Social Group model (Agrupación Social del Lugar in Spanish or ASL) for non-indigenous communities is an important part of the forest landscape in Bolivia. Per Resolution # 133/97, communities must show that they have used forest resources from a particular area for at least 5 years in order to be granted access without a bidding process. They pay the minimum legal rate for this access. For indigenous communities, the Land of Original Communities (Tierras de Comunidades Originarias in Spanish or TCO) model offers inalienable and exclusive rights over a forest area, but residents must follow standard forestry laws if they decide to engage in commercial use of their resources. Bolivia also has models for researchers, small communities, and small forest owners.

Brazilian regulations (Law # 11.284/2006 and Decree # 6.063/2007) set the stage for both state and federal concessions, although each develops its own rules to administer concessions in its jurisdiction. This law was passed as part of a multi-pronged effort to reduce the deforestation rate in the Amazon which had reached record levels in 2004 (Azevedo-Ramos et al., 2015). The Brazilian concept of a concession is similar to other countries: government delegates the right to sustainably manage public forest to obtain goods and services for private gain. This right is granted via a public bidding process to an individual, company or consortium that complies with regulations and shows the capacity to comply with the terms of the contract. Federal concessions are granted over area and payments are based on the volume extracted. The main steps taken to implement the process in Brazil are worth noting:

- Pre-bid (pre-edital in Portuguese) – definition and mapping of overall forest area, development of a broad management plan and environmental review for large conservation units (not specific concessions per se however), publication of bidding documents, and public consultation.
- Preparation of bidding documents- based on one price for all species groups or differentiated prices per species to establish a minimum bid price (this approach is under review and is being modified).
- Receipt of bids and evaluation by SFB based on specific and consistent environmental, financial and social criteria (reviewing body does not vary).
- Decision by SFB.
- Payment of bond by winning bidder and awarding of concession.
- Signing and approval of contract

For Guatemala, in 1990, the government passed the “Reglamento de la Ley de Áreas Protegidas, Acuerdo Gobernativo 759-90” allowing for concessions to provide legal access to specific resources within the MBR depending on scale and likely impact of use. These rights can be granted by simple licenses when an entity wishes to harvest a small volume of a product, the impacts are minimal, and harvesting will occur for less than one year. When the state believes that impacts may be greater or that other users may oppose the activity, it requires public inputs prior to granting approval. Both of these approaches utilize licenses which expire by a certain date less than a year. The third approach is based on concessions for a longer-period of time and are more complicated than a simple license. When the state is fully aware of the productive potential of the resource in question and the exploitation of the same may have major and widespread impacts, the concession model is considered the most relevant (Colom de Moran, 1996).

While forest concessions are located exclusively in the MBR under the jurisdiction of CONAP, Guatemala’s forestry law does allow for timber concessions on federal (national) public lands occupied by primary or secondary forests that would be under the jurisdiction of the Instituto Nacional de Bosques (INAB). Consultation with INAB indicated that no natural forest management concessions are located on INAB land. The most influential aspects of Guatemala’s laws as related to forest concessions are noted below:

- Decree 5-90 prioritized the use of natural resources as a conservation strategy that would allow local residents to fulfill economic needs in a sustainable way based on forest resources.

- The Acuerdo Gobernativo 759-90 (759-90) defined a concession as a systematized structure for ensuring the provision of public services according to legal precedents, based on the sustainable utilization of plants and animals over a continual period, maintaining core conservation qualities for future generations, and managing based on technical principles to attain the objectives of the MBR.

The agreement 759-90 also required CONAP to develop a Master Plan for the MBR and for which annual operating plans for specific areas needed to be established and approved. CONAP had to identify, quantify, and locate the particular resource to be managed (timber or non-timber) as well as understand how it would be harvested and what the balance would be post-harvest (i.e. standing volume minus harvested volume equals remaining volume plus projected growth). This laid the conceptual groundwork for classic natural forest management based on field inventories, growth and yield data from permanent monitoring plots, and silviculture. This decree also introduced the concept of state control and monitoring to ensure compliance as applied not only to protected areas, but also concessions, thus firmly placing CONAP in the driver's seat.

In 1996, the Guatemalan Congress passed Decree 101-96 that explicitly noted how public benefits needed to be protected, public participation in the entire value chain was important, and that the private sector had a key role to play in managing the country's forest resources. While advocating for public involvement, the policy also recognized that communities did not have the capital nor the experience to manage all forests and provisions were made for industrial concessionaries. In 2011, this law was replaced by Law # 29763 Ley Forestal y de Fauna Silvestre. Implementation of the law is still being refined and related regulations have only been very recently approved; it does not contemplate major changes to the concession system.

In Guyana, both colonial and independent governments have sovereignty over most of the forest in the country except for private and Amerindian-owned properties (1.3 million ha owned by Amerindians) (ITTO, no date). As established in Guyana's 1997 National Forest Policy, the government's objective is to conserve, protect manage and utilize the country's forest resources while also ensuring forest productivity. Perhaps more so than any other country, Guyana's policy is pro-industry emphasizing the broad use of resources to deliver fair returns, improving yields while preserving the environment, and ensuring watershed protection (ITTO, no date). The Forest Act (Chapter 67:01 of the Laws of Guyana) was in force from 1953 to 2009. It was replaced by the Forest Bill (2009) to promote sustainable forest management, protection of designated forest reserves, and regulation of forest operations and wood products. Related to concessions, this law required the government to:

- invite the public to apply for specific concession areas,
- make available copies of all documents related to the area to be granted,
- maintain environmental integrity and foment social development (specifically for community forest production and primary processing),
- streamline forest concession areas by size of area according to international best practices,
- require management plans and annual operating plans, and compliance with the same,
- offer a competitive bidding process,
- provide communities with the opportunity to access local forest areas,



- ensure concession prices at market rates or greater and a revenue structure that captures greater rents for the state via both area and volume fees,
- establish penalties for non-compliance, and
- develop a protocol for dealing with changes in ownership.

For Peru, Article 3 of Supreme Decree N°014-2001 (Reglamento for Forestry Law N°27308) allows for two types of timber concessions on federal (national) public lands occupied by primary or secondary forests in accordance with zoning stipulations and via public bidding processes:

- Category I: from 5 to 10,000 ha for a 40-year renewable period
- Category II: from > 10,000 – 40,000 ha for the same 40-year renewable period.

Peru does not have community forestry concessions, but does allow for indigenous communities to harvest timber on their communal property as well as for private individuals. As will be discussed further, large volumes of wood come from such landholdings; more so than the volume derived from concessions. Unlike Brazil, Peru does not have state concessions, but the country is establishing forests for municipal use and management on public, federal lands.

Peru also has concession structures for reforestation and non-timber products (fruits, resins, flowers, medicinal plants, etc.) that do not result in the removal of forest cover and are good for 40 years on a maximum of 10,000 ha. Conservation concessions are available for wildlife protection and allow for research, education and ecological restoration. These concessions are only available in land not zoned for permanent production and logging is not permitted. Eco-tourism concessions are granted for 40-year periods (renewable) on areas over 10,000 ha where commercial logging is not allowed and are allocated to low-impact activities (education, research, travel) that provide significant socio-economic impacts to the local populations. Although uncommon, Peru also allows for wildlife concessions up to 25 years (renewable) on areas determined by the needs of the particular species. The below table shows the different types of concessions by number and areas.

**Table 5. Different types of forest-related concessions in Peru (2013)**

Concession Type	Number	%	Area (Ha)	%
Brazil Nuts	983	49.50%	863,778	8.60%
Wood - Granted	588	29.60%	7,542,077	74.80%
Reforestation	293	14.80%	136,863	1.40%
Conservation	38	1.90%	1,086,806	10.80%
Ecotourism	35	1.80%	77,674	0.80%
Rubber	24	1.20%	16,155	0.20%
Wood - Under bidding	20	1.00%	343,885	3.40%
Wildlife	4	20.00%	12,832	0.10%

(Source: MINAG – DGFFS, 2013)

The majority of previously granted forest (wood) concessions in Peru are inactive: ranging from 50% in Loreto to over 70% in Ucayali. Pucallpa originally had 175 concessions but today has only 14 functioning well (with only an additional 43 still even active on paper) as illustrated in Table 6.

In Suriname, by 2003, 67 concessions covered 1.74 million ha with an average size of only 25,970 ha had been granted (ITTO, 2005). These concessions were distributed as follows:

- 8 foreign-owned concessions between 100-150,000 ha (totaling 1.09 million ha of which 740,000 ha were being rescinded),
- 10 concessions between 5-10,000 ha, and
- 34 concessions less than 5,000 ha.

It is notable that 67% of the large, foreign-owned concessions were subject to withdrawal, and there are few actual production concessions such as Greenheart Group with almost 300,000 ha, and Sunwide Investment's 25,000 ha operations. Most concessions are held for speculative purposes and are not generating log volumes. In addition, most are local companies with little access to capital, limited business experience and low exposure to global markets. More than 75% of the country's concessions have been abandoned or do not comply with governmental regulations.

**Table 6. Status of concessions in the Department of Ucayali, Peru**

Legal Status	Superficie (ha)	Percentage (%)	Number (#)	Average Size (ha)
Active	707,691	25	43	16,458
Inactive	1,061,682	37	56	18,959
PAU	178,348	6	14	12,739
Cancelled	558,653	19	38	14,701
Planned for cancellation	379,805	13	24	15,825
	<b>2,886,179</b>	<b>100</b>	<b>175</b>	<b>16,492</b>
<b>NOTE:</b> Active concessions category does not include CFA which is insolvent				
<b>REFERENCE:</b> Ing. William Pariona, Technical Advisor, GIZ (June 2015)				

## 5. History of Forest Concession Programs

### A. Governmental motivation

Due in large part to technical assistance provided by the Bolivia Sustainable Forest Management Project (BOLFOR), funded by the United States Agency for International Development (USAID), this country was able to design a concession program based on accepted technical principles for sound tropical forestry (Guzman, 2015). BOLFOR initiated activities in early 1997, and one of its first tasks was to work with the government of Gonzalo Sánchez de Lozada to modernize the country's forestry law. Elected president in 1993 along with Victor Hugo Cárdenas, South America's first indigenous vice president, de Lozada instituted major constitutional, social, economic and political reforms. These included rewriting the constitution to include provisions for indigenous rights, decentralizing

political power by creating 311 municipal governments, guaranteeing 20% of the federal budget for municipalities, and teaching public school in indigenous languages.

The reform agenda most reflective of what the government ultimately did with forest concessions was the capitalization program designed to form joint ventures (from state-owned companies) between private capital and Bolivian residents, and requiring the private capital be invested directly in the new company. Although controversial, Sanchez de Lozada felt that this approach was necessary to reduce corruption and obtain scarce capital to bolster the country's key sectors.

Along these lines, the main motivation behind the well regarded forestry law of 1997 was the recognition that sustainable management of concessions was the most pragmatic approach to reducing corruption and decreasing illegal logging. The country's leaders believed that a well-managed permanent forest estate would provide a steady supply of raw materials to the country's wood processing industry and allow it to diversify, generate jobs, and expand the country's economic base (Personal knowledge, 1998). This tenet proved true and Bolivia's forestry sector grew to become one of the most robust in the tropics.

A major change in the government's motivation and political paradigm occurred in 2005 when Evo Morales was elected President of Bolivia. Pre-disposed to giving greater political power and economic benefits to the country's indigenous population, Mr. Morales was skeptical of the large concessionaires, none of whom were of indigenous descent, all of whom had good connections with the country's power brokers, and many of which had additional business in addition to forestry. Once in power, a review of the concession program purportedly revealed illegal child labor, illegal cocaine manufacturing, and concessions that had not been granted via transparent mechanisms but rather due to political connections (Carreras, 2015). In addition, the government felt that the annual payments of US\$ 1/ha/year were too low and that the lands should be made available to landless peasants. As a result of the decidedly different political beliefs and economic policies of the Morales administration, the concession program in Bolivia has been essentially disbanded: many have reverted back to the government and those that remain will not be reapproved when they reach the end of their initial contract period.

As the largest timber producer in South America and the largest tropical wood consumer in the world, Brazil's main motivation for its concession program was to ensure raw materials for the wood products industry which plays a strong role in the socio-economic development of rural Amazon. While this may seem overly generous to one particular industry, less than 2% of the country's Amazonian region may be allocated to concessions, thus suggesting that this is part of a balanced approach to development. Of particular relevance was the fact that one year prior to passing the new forestry law which set up the legal basis for forest concessions, Brazil's deforestation rate in the Amazon had reached its second highest level ever (Azevedo-Ramos et al., 2015).

In addition, one must recognize that 90% of Brazil's hardwood products comes from the Amazon and the domestic market consumes most of this Amazonian production. In 1998, Brazil's Amazonian forestry sector employed roughly 500,000 people (5% of the available workforce (~500 000 people) and generated about US\$ 2.2 billion (Blate et al., 2002 from Lete et al., 2000). Fifteen years later, SFB reported approximately 2,300 wood-based businesses in the Legal Amazon generating a total of 204,000 jobs of which 32% is direct employment (SFB, May 2014). Thus, any rationale strategy to reduce deforestation in the Brazilian Amazon must include a pragmatic approach to stabilizing forest

resource use, wood production and the manufacturing of wood products. Industrial forest concessions were considered a legitimate means for accomplishing this task.

The approach to forestry contemplated in the new law is based on modern techniques, job generation, low environmental impact and the argument that a well-managed forest will not be converted to other non-forest uses, but rather allow for a perpetual supply of products for the country. Brazil had the advantage of looking to its neighbors who had established concession programs previously and could avoid similar mistakes. As a result, it spent considerable effort on designing a transparent and fair system that would foster competition to ensure healthy revenue streams to the government (Azevedo-Ramos et al., 2015). The government consistently stresses the following reasons for having developed a forest concession program:

- Active management keeps forest standing (complementary to protection)
- Concessions protect and maintain public goods such as water, biodiversity, and carbon
- Formal job creation in underserved areas (with training, medical care, benefits)
- Finance monitoring & control functions ensure a stream of revenues to the government

Guatemala has always had an active civil society engaged with the government on forest conservation and an interesting history of pendulum shifts on forest policy. Directly related to concessions, Petén forests had been inventoried and had a history of formalized blocks being granted by the state. There was also a history of user rights over defined areas subject to state control and even earlier, an informal approach to resource partitioning by users. Against this backdrop, Marco Vinicio Cerezo became the first democratically elected, civilian president in Guatemala since 1966, and faced immense challenges from an ongoing civil war characterized by forced relocations, refugee movements to Mexico, open battles and a scorched earth policy. Cerezo had to proceed slowly with professionalizing the Guatemalan military, reducing human rights violations, and making major changes to improve the socio-economic conditions that led to a strong guerilla movement. Cerezo wanted to leave his mark on Guatemala by bringing that violence-wracked country into the modern world.

At the same time, a small group of well-educated urbanites began developing a conservation agenda and pressuring the government to preserve environmentally important areas including northern Petén. Cerezo realized that the environmental movement was an area that he could positively impact without causing a severe reaction that would further complicate his political life. At the same time, the U.S. government badly wanted to support the civilian president and considered forest conservation an important topic that it decided to support via the MAYAREMA Project. This confluence of different motivations ultimately led to a pragmatic approach to maintain Petén's forest cover by a relatively autonomous governmental entity (CONAP) which had strong support by the country's political elite. The combination of Guatemalan and foreign financial support exceeding US\$ 40 million over MAYAREMA's project life; the presence of experienced international non-governmental conservation organizations such as The Nature Conservancy (TNC), Conservation International (CI) and CARE; and perhaps most importantly, committed "local "champions" willing to lead the charge resulted in a surprisingly strong, multilateral show of support for the concessions. One example of this was the Comité Consultivo Forestal (Forestry Consultation Committee in English), a voluntary body that provided advice to CONAP on forest policy issues with members from all across the spectrum.

The motivation behind Guyana's interest in concessions could not be more different from Guatemala's. Located on South America's northern coast and bordered by Brazil, Venezuela and Suriname, Guyana's main population occupies a narrow strip facing the Atlantic Ocean. While only a short distance from the Caribbean, Guyana shares cultural attributes with the islands, but is very different ecologically. Whereas most Caribbean islands have little remaining forest, Guyana harbors almost 14 million ha of largely intact tropical forest. An appreciation of this unique country's history is necessary to understand the evolution of its concession program.

Guyana has been commercially logged for Greenheart (*Chlorocardium rodiei*) since 1882. Despite such a long logging history, Guyana has one of the highest percentages of forest cover per land mass of any country in the world (van der Hout, 1999). The country has never had high population growth rates like many parts of Latin America. With barely 782,000 people, Guyana is experiencing a population decrease (-0.44%) as residents leave Guyana in search of better economic opportunities (countrymeters.info. 2015). In 2013, according to the World Bank, Guyana had a +0.53% population growth rate (tradingeconomics.com. 2015). Over 15 years ago in 1998, Guyana had more inhabitants than today (863,000) and an annual growth rate of +2.3%. It is precisely this lack of population pressure and limited economic development that has kept Guyana's forests standing.

At the time Guyana became independent of Great Britain in 1966, its economy was dependent on the export of commodities, principally: gold, bauxite, rice and sugar. Guyana was a classic example of resource exploitation by colonial powers who invested only the minimum to be able to extract the aforementioned commodities. Upon achieving independence, as a response to foreign domination, the new government adopted an anti-capitalism, socialist approach based on state intervention in the economy. While this may have been an understandable reaction, the impact of such politics was negative: nationalized sugar and bauxite companies went broke, the 1973 oil crisis increased petroleum prices and the government's debt at the same time that prices for sugar and bauxite plummeted. As a result, Guyana's economy stumbled along at 0.4% annually from 1966 to 1988.

The government had no real choice: in the late 1980's it began promoting a market-based economy. Investment incentives, reduction of state controls, and liberalization of prices all lead to a rapid expansion of the Guyanese economy, a stable currency and decreased inflation. In 1987, due to these policy changes and increased interest from Asian companies, the government opened up its forest resource to greater investment by allocating 2.4 million ha for logging. In 2000, the Guyana Forestry Commission (GFC) made a major shift toward opening up access to forest resources for rural communities by establishing a Social Forestry Program and leasing forests to communities.

For Peru, the management and control of forest resources was granted to the National Institute for Natural Resources (INRENA) in 1999, which subsequently established the Dirección General Forestal y de Fauna Silvestre (DGFSS or General Directorate of Forestry and Wildlife) to decentralize functions. The country established the concession model via Law # 27308 in 2000 and its operational statutes via a Reglamento (Regulations) via Supreme Decree # 014-2001-AG. This political development allowed wide-scale forest utilization by private entities via long-term contracts with the government, as long as concessionaires complied with sustainable management criteria. The primary motivation in Peru was a growing manufacturing sector that needed access to raw materials coupled with the realization that the government was unable to protect millions of hectares of Amazonian forest from illegal logging, conversion or invasion. Concessions were viewed as a

pragmatic development and conservation strategy for a remote, unpopulated part of the country with little industry.

Suriname passed a Forest Management Act in 1992 that established a permanent forest estate (PFE) of 11.3 million ha comprised of (ITTO, 2005)<sup>5</sup>:

- Production forest: 6,890,000 ha
- Protected area: 4,430,000 ha, and
- Plantation forest: 7,000 ha

The Forest Management Act was established to provide for: “the management and conservation of forest resources, and to regulate forest exploitation and the primary forest processing industry, in order to increase the economic, social and ecological functions of forests as national resource and to enhance a responsible development of the forestry industry”. (Ministry of Natural Resources Suriname/FAO, 2002).

On paper, the law did not seem that different from those of other countries; it promised to promote sustainable use of forest resources by establishing regulations for management and wood processing, conserving biodiversity, and accounting for the interests of forest-dwellers (ITTO, 2005). Purportedly however, the driving force behind this law lay in the political alliances between Suriname’s multicultural population and Asian countries (particularly Indonesia and China), the government’s need to stimulate economic development with one of the few resources available (Suriname is the country with the highest percentage of forest cover in the world), and a strong demand for tropical hardwoods in Asia’s booming economies (Sizer and Rice, 1995).

It is worth recalling that Suriname was a colony that rotated between British and Dutch ownership from 1630 until 1815 when the Dutch gained dominion over the land with a primary interest in sugar production. Slaves had been imported to Suriname from West Africa, but when slavery became illegal in 1863, Indian and Indonesian immigrants were encouraged to come to the country to fill the labor gap. This combination of African, Indian, Indonesian, Dutch and native Indians has given the country a diverse makeup, but also political parties divided strongly along ethnic lines (Sizer and Rice, 1995).

In 1993, Suriname sent a delegation to Indonesia to present the forest concession option to potential investors. Several months later, a contingent of Indonesian investors visited Suriname and incorporated themselves as a local company called MUSA (Sizer and Rice, 1995). Later that year, MUSA received a 150,000 ha concession. Subsequently MUSA proposed establishing an additional 60+ local companies to receive a total of over 10 million ha of concession area. This attempt to dominate the country’s forest estate was not well received since the MUSA proposal would have resulted in almost 63% of the country under concession belonging to one company (Suriname has 16.3 million ha of area). The government defended its concession plans as a pragmatic way to revive the country’s dismal economy in the early 1990’s by (Sizer and Rice, 1995):

- Generating revenues from workers' salaries to improve the country's balance of payments,
- Providing employment to unemployed or underemployed citizens,
- Promoting development of the rural areas, and

---

<sup>5</sup> In 2003, ITTO estimated that the actual amount of accessible production forest was only 4.5 million ha.

- Performing all of the above in an environmentally sustainable fashion.

## B. Evolution of system

Bolivia has always relied on federal control of forest access; initially via the Superintendencia Forestal (Forestry Supervisor – FS), but now through the ABT, a semi-autonomous institution that has implemented massive change in the forestry sector. By 1996, the FS had granted 89 concessions to companies and by 1999, had approved management plans covering 6 million ha of which roughly 4.8 million ha were in concessions (Blate et al., 2002). Under the ABT, however, this figure dropped by over half to only 42 concessions covering barely 3 million ha (6% of the entire permanent forest estate) by 2013 (Carreras, 2015).

The ABT's powers to control, supervise and ensure legal compliance with Bolivian regulations were established via Forest Management Law 1700 (1996), the Agrarian Reform Law 1715, and the Community Rechanneling Law 3545 passed in 2007 (WWF, 2015).

In the last several years, the ABT has assumed an anti-concession attitude, exerting much stricter and less flexible controls, and will not grant new concessions. It regularly states that the concession program was a failure leading to deforestation, thus justifying its “command and control” stance on forest and wood product issues. Most observers believe that this attitude is a manifestation of policy articulated by the Morales administration to offer access to land to Bolivian citizens residing in the over-populated highlands.

The trend is for concessions to revert to the state which then foments contracts between community owners and wood manufacturers as was common in the early 1990's. By 2014, more than 60% of Bolivia's productive forests were being managed by indigenous communities with much lower volumes of harvest. Few of these community operations actually function as productive enterprises; most just sell stumpage to buyers. This has affected the country's wood products sector: it now imports much of its wood from outside the country and is no longer a global leader in tropical forestry. While the impacts of these policy changes have been negative in terms of Bolivia's timber production, there have been some positive advances:

- On a daily basis, the ABT operates as less political entity than past agencies and has hired well-trained, professionals that operate under strong technical guidance (i.e. WWF helped the ABT to complete a full forest inventory of the country).
- Although the term “concession” is no longer used and no more will be granted, supervision remains vigilant and the ABT does work closely and well with the remaining concessionaires.
- The agency now focuses on facilitating and approving Integrated Forest Use Plans (Planes Integrales del Uso del Bosque) rather than simple timber plans, in an effort to diversity revenue streams.
- The government no longer confiscates wood but rather, gives “red cards” for poor performance or illegal activities. It then works with the operator to improve performance. For consistently illegal operations, the government publicly notes that wood should not be purchased from these firms (Carreras, 2015).

Brazil's concession system is much more complex than Bolivia's. Three governmental entities are involved in the process, and although they all belong to the Ministry of the Environment, they have separate functions and different operating philosophies:

- ICMBio is responsible for managing Conservation Units (CUs) within which concessions are located and leads related research, policy, public use, and policing activities on a large scale, as well as determining where sustainable forest management can be performed;
- IBAMA is responsible for granting the environmental "license to operate", monitoring sustainable forestry activities and investigating environmental crimes; and
- SFB is responsible for operating the concession program per se (i.e. inventory, public consultation, approval, establishing prices, making operational regulations, bidding process, and granting concession).

As one might expect given the involvement of three institutions, progress in granting concessions was slow in Brazil due to bureaucratic obstacles and misalignment on priorities and approaches. Minimum bid prices were also too high and extraction was difficult. Most concessionaires must build infrastructure systems from scratch and do not generate returns the first year. This is coupled with delays in approval of relevant documents which has major negative impacts on revenues (although the government has lowered prices in recognition of this situation). For example, two neighboring concessionaires in Pará State, GOLF and EBATA, won bids in 2010 but were unable to initiate operations until 2012, over two years after successfully obtaining their concession. An additional reason for the slow process was that SFB had inadequate numbers of trained personnel, and a major work load in developing technical guidelines, preparing management plans, and collaborating with other state entities.

In recognition of the initially slow granting of concessions, SFB established new technical guidelines in 2010 and 2011. One of the biggest modifications was to allow the federal government to establish a minimum price via an average among all species or with differentiated prices depending on value of each species. Once these improvements were approved, in 2012, SFB was able to designate 2.9 million ha of potential concession areas spread among 10 different FLONAs in the Amazon. While this was a positive step, inventories and forest management plans still needed to be created for each. Such technical work over such a large area has resulted in the process going slowly, but advancing nevertheless.

In the early 1990's, Guatemala began developing a forest concession system for the MBR with the support of various non-profit organizations and the U.S. and German governments as a dual conservation and sustainable development strategy. In 1994, after years of technical and legal studies, and incipient forestry work with communities both outside the MBR (i.e. Sayaxche, San José Buena Fe, Bethel) and inside (San Miguel la Palotada), CONAP granted the first (and smallest) forest concession at slightly over 7,000 ha to San Miguel. In 1998, CONAP granted a 12,218 ha management unit near Belize to a small group of independent loggers from Melchor de Mencos called: Los Impulsores Suchitecos (analogous to "The Suchiteco Movers and Shakers" in English) and almost 54,000 ha to the traditional forest-based community of Carmelita in northern Petén. By late 2000, all remaining concessions had been granted, including 132,215 ha for industrial uses. CONAP also regulates small, private forest lands in the MBR's buffer zone but these are not concessions per se. The first contract signed by CONAP for a non-concession area was in 1994 with 50 families of the Bethel Cooperative located along the Usumacinta River. Bethel holds title to 4,149 ha of private



land, of which almost 2,900 ha (70%) was previously logged and unlogged tropical forest (Gretzinger et al., 1993).

The Guyana Forestry Commission (GFC) was created in 1979 but was restructured and assigned broader and more progressive tasks as a semi-autonomous public agency with passage of the GFC Act 67:02 (ITTO, no date). Its new objectives were to manage public forest resources for the socio-economic benefit of its citizens rather than focusing almost exclusively on industry. The GFC is a fairly autonomous entity with broad-ranging authority over state forest lands. It is a member of the Cabinet-level sub-committee on Natural Resources and the Environment, but has competing functions with the Lands and Mining Commission, both of which can issue permits on the same land for different objectives. It administers the Forest Act, also advises the Minister of Agriculture on forestry-related issues, and represents the government in forestry forums.

The GFC chose to emphasize sustainable forest management as the basis for a healthy wood products industry as the best way to reconcile two seemingly conflictive needs. Not only does the GFC establish practice codes and management guidelines, but it also foments research, makes forest inventories, provides extension services, inspects wood products, and represents the government in international arenas. This change was a major step in the evolution of the country's forest concession system since it set the precedent for clear rules, transparent decision-making and a professional approach to forestry. Prior to this phase, decisions were far from transparent: state Forests were established via broad decrees over large areas with little or no public consultation (7.7 million ha in 1953, 1.4 million ha in 1969, and 4.6 million ha in 1997 for a total of 13.7 million ha) and the country's largest concession (Barama) had been established with virtually no consultation or transparency.

After opening up its forest resource to concessions in order to increase trade and revenues, by 1996 the Guyanese concession area had increased to 6.5 million ha under three modalities:

- 41% via Timber Sales Agreements (TSA's) on areas larger than 24,000 ha for periods greater than 20 years;
- 17% through Wood Cutting Leases (WCL's) for smaller areas ranging from 8,000 to 24,281 ha and for periods ranging from 3 to 10 years; and
- 42% via State Forest Permits (SFP's) for annual harvests on less than 8.094 ha (GFC, 2015).

In 2011, Peru's 2000 forestry law was replaced by Law # 2976 and further refined in 2015. Some of the more relevant aspects of this law as well as the specific case for concessions are included here. To promote the efficient use of the country's public forest, Peru established the National System of Forestry and Wildlife Management (SINAFOR) with a directorate comprised of:

- Ministers of Agriculture and Irrigation, Environment, Production, Culture, Economics and Finance,
- OSINFOR that supervises compliance with national forestry regulations<sup>6</sup>,
- the national center for strategic planning (CEPLAN), and
- the national Forest and Wildlife Service (SERFOR).

---

<sup>6</sup> OSINFOR is an independent institution that responds directly to the Presidential Council of Ministers and is responsible for monitoring the compliance of concession contracts and technical guidelines provided by SERFOR.

At the operational level, SERFOR plans and implements forest-related activities that allow the country to comply with national policies and laws. It establishes protocols for carrying out forest inventories and management plans, data-sharing, technical forestry and harvest guidelines for different-sized operations.

Pressure from international donors, as well as the need to show progress on improving the country's forest management system to comply with the environmental appendices of the U.S. and Peru Free Trade Agreement, caused the Peruvian government to quickly issue concessions in three major regions despite their contrasting physical, cultural and economic traits. Despite recommendations from organizations such as CIFOR regarding the need to adjust planning requirements and harvesting systems to each region, governmental officials did not have the time or interest to take such recommendations into account. Design flaws, coupled with accelerated bidding processes, lead to an overall aura of speculation and resulted in many of the Peruvian concessions being granted to individuals with relatively little forest sector experience.

On one hand, Suriname had achieved a certain degree of fame in the world of tropical forestry due to its innovative Celos silvicultural system based on the twin principles of reduced impact logging and post-harvest silvicultural treatments. On the other hand, its skeletal concession program began in 1993 with minimal criteria and management plans designed primarily for collecting user fees from large, foreign-owned companies. Against this backdrop is the fact that all non-privately owned Surinamese forests belong to the state. Although Amerindian and Maroon people of African descent claim rights to traditional lands, the Surinamese constitution does not allow for collective land ownership (ITTO, 2005). Such people were to be largely excluded by the government's plan to generate jobs, development impacts and tax revenues.

The program did evolve to account somewhat for local uses. By 2005, in addition to concessions granted via less than transparent procedures, Suriname had issued wood-cutting permits known as HKV's to Amerindian or Maroon communities on state-owned land, and Incidental Cutting Licenses (ICLs) for subsistence farmers that needed to convert forest to agriculture (ITTO, 2005).

In 1970, Venezuela became the first Latin American country to establish a forest concession program which grew to 3.2 million ha by 1992. Concession size averaged slightly under 100,000 ha per unit and were located primarily in the department of Guayana. Due to strong governmental pressure to suspend the industrial concessions (which were essentially viewed as family monopolies) and change the model to one of multiple products in addition to wood, there are now only six functioning forest management units. As a result, the percentage of Venezuelan wood derived from concessions has dropped to 6% from 40% in 1987. Similar to the situation in Nicaragua where Venezuelan funding was used to establish a semi-governmental logging company, Venezuela passed Decree 7.457 in 2010 to create a "Socialist National Forest Company" that now dominates the sector.

### C. Private sector interest

In Bolivia, the private sector played a key role making rapid adjustments in its basic business model to bid on, win, and manage forests according to the new regime. Virtually all of the most successful companies had large concessions linked to their processing facilities. The Bolivian Forestry Trade Association was very active and held well-attended trade shows that led to strong exports, increased

value-added production and increased employment. Compared to other countries, Bolivia's private wood products industry showed the most enthusiasm, creativity and unity in moving forward. While most companies initially targeted only the high value species like mahogany and Spanish cedar, they quickly retooled and began developing new product lines to maximize efficiencies in their geographically-fixed concessions with different species.

Things are different in Bolivia today as barely 1.5 million ha are in concessions. For example, very few concessions are left in the 6.4 million ha Department of Pando, which still harbors considerable forest cover and would be a logical region to implement a concession program. Another point of reference is WWF's Bolivia's Forest and Trade Network (FTN) which in 2010 had 25 FSC-certified members working to develop market links with international buyers. It now has only five company members (Carreras, 2015). The few remaining concessionaires are all long-time players in the industry, have vertically integrated operations, diverse business interests, and large areas<sup>7</sup>. Some of the more successful companies include:

- DEKMA which purchased the 119,200 ha CINMA concession in Bajo Paragua from San Martin;
- The Roda family maintains a large quantity of FSC-certified concessions including CIMAL (75,400 ha) and CIMAL/IMR (303,450 ha) and continues to prosper partially due to the company's development of pre-fabricated homes and supply of timbers to the mining industry, and
- San Luis with 80,848 ha of certified forests (info.fsc.org. 2015)

Manufacturers in the Brazilian Amazon have had a long-standing interest in concessions particularly as the supply of logs from legal sources decreases due to deforestation and an overall tightening up of control functions by the government. Surveys conducted by IFC in 2014 of 10 companies in Pará State revealed that virtually every manufacturer was interested in obtaining a concession and felt that the time was long overdue. This is a logical consideration given Table 7 which illustrates the pervasive nature of the sector in Brazil's Legal Amazon: over 2,200 companies consuming over 14 million m<sup>3</sup> of logs in 2010 provided direct employment to over 200,000 individuals. This economic activity was spread over eight states and generated almost US\$ 2.5 billion in gross revenues, primarily in remote areas where alternative sources of income were not available on a wide scale.

TRIUNFO, a long-time plywood manufacturer in the State of Acre, illustrates why companies are interested in concessions as well as how they can work with different suppliers to meet their volume targets. With a total annual capacity of 60-70,000 m<sup>3</sup> in panel products, the company's 7,840 ha "public contract" does not provide adequate volumes so it must purchase wood from smaller operations with volume-based contracts.

---

<sup>7</sup> By comparison, although not a concession, the ASL Caoba manages only 15,000 ha of FSC-certified forest in the Iximas region. Previously large, successful, and high-profile companies such as La Chonta have returned their concessions to the government and left the sector.

**Table 7. Economic and production-related aspects of the wood products sector in the Brazilian Amazon**

States	Number of firms	Annual log consumption (thousand m <sup>3</sup> )	Annual wood processed (thousand m <sup>3</sup> )	Annual Employment (direct+indirect)	Annual Gross Revenue (US\$ million) (i)
Acre	24	422	193	4,641	91.13
Amapá	48	94	41	1,516	16.08
Amazonas	58	367	142	6,525	57.69
Maranhão	54	254	90	3,975	29.55
Mato Grosso	592	4004	1795	56,932	800.46
Pará	1067	6599	2550	92,423	1,090.55
Rondônia	346	2220	925	34,825	357.32
Roraima	37	188	70	2,865	31.38
<b>Legal Amazon</b>	<b>2,226</b>	<b>14,148</b>	<b>5,806</b>	<b>203,702</b>	<b>2,474.15</b>

(Source: IMAZON and SFB, 2010)

In the early 1990's when the Guatemalan concession model was being developed there were at least 10 sawmills with a history of harvesting wood in the MBR. Most of these companies had established operations in the late 70's and were accustomed to a simplistic business model based on the selective harvesting of mahogany and cedar for ready markets with strong prices. The economic power wielded by these companies in the two decades prior to the initiation of a concession program was quite high and profits were good. The idea of community concessions was largely unaccepted by the traditional wood products industry and many interviewees noted that disparaging remarks regarding the capacity of communities were common. Such comments were not without some logic since communities had no record of managing forests for a profit and implementing what were essentially industrial operations. As community concessions came into play in the mid-1990's, some of the companies simply closed up shop and their owners left to engage in different businesses (i.e. Jorge Peroni's mill in San Andrés) or processed illegally sourced wood from along the road to El Naranjo.

As the forest area that could supply legal wood became consolidated in communities, Baren Commercial and GIBOR S.A. realized that it was in their best interest to directly engage with the new system. Both companies successfully obtained large concessions and expanded their operations, species mix, and product offerings. A private company that represents the community interests is Community Forest Services Company, Inc. (Empresa Comunitaria de Servicios de Bosque, S.A. - FORESCOM). Located in the old offices of the Petén's forest worker's union, the company is owned by nine FSC-certified communities with 220,000 ha of productive forests. FORESCOM provides management, logging, wood processing (milling, planing, drying), marketing, and finance services to its owners for a fee. Despite early financial problems, FORESCOM has become a viable enterprise that develops products from Lesser Known Timber Species (LKTS) and has successfully entered high-end markets in the U.S. and Europe.

Guyana's forest concession program contributed to the growth of the country's wood products industry which increased contributions to its Gross Domestic Product (GDP) from 1% in 1987 to 5%

in 1996 (van der Hout. 1999). As part of the liberalization process, and particularly after entering the Single Market and Economy (CSME) of the Caribbean Community and Common Market (CARICOM) in 2006, timber exports assumed greater importance as generators of revenue, and the economy began growing. Still, Guyana was unable to reduce its debt load, and in March 2007, the Inter-American Development Bank (IADB), the country's largest creditor, forgave US\$ 470 million of its debt, thus serving to decrease its debt-to-GDP ratio from 183% to only 60% (forbes.com. 2014).

In addition to Barama, a 1.6 million ha forest concession and processing company owned by Samling Global Ltd. Subsidiary, Guyana has many other companies that produce a range of products almost exclusively for the international market (Demerara Timbers Ltd., Variety Woods and Greenheart Ltd., Toolsie Persaud Ltd. and Iwokrama are some of the largest). The country's Forest Products Development and Marketing Council (FPDMC) is a unique entity established by the government to assist concessionaires and manufacturers in the task of researching uses for new species, establishing prices, fomenting trade and promoting the sector.

According to ITTO, Guyana's log production has fluctuated depending on the global economy: 366,000 m<sup>3</sup> in 2004, 474,000 m<sup>3</sup> in 2006, and 299,000 m<sup>3</sup> in 2009. Lumber production has steadily grown over the years as installed capacity improves (64,000 m<sup>3</sup> in 2009 had increased from 50,000 m<sup>3</sup> in 1999), but plywood production has been decreasing. Total wood exports in 2009 were US\$ 48.1 million compared to US\$ 31.3 million in 1999. Much of the increase in value of exports has continued today due in part to the increased tariff on log exports established in January 1999.

Contrary to Bolivia and Guatemala, many of the initial investors in Peru's concessions were either speculators or individuals with minimal experience in forestry; many thought they could make money quickly and with little investment. Estimates by such interested parties on operational costs, investment needs and expected revenues were often inaccurate and resulted in overly high bid prices or lack of capital. Today, the situation has changed dramatically. Virtually every member of the wood products sector understands now that concessions are not "business as usual" and require substantial capital as well as patience to comply with governmental regulations and slow processes. As a result, the smaller operators find it much easier to obtain raw materials from communities, private holdings and abandoned concessions. Such companies are not interested in concessions at this time, and despite the short-term nature and complicated negotiations associated with purchasing logs from indigenous communities, most prefer this approach to concessions.

On the other hand, larger, internationally-funded and/or strategically oriented companies are actively buying concessions and consolidating their holdings. Nature Peru (200,000 ha), Maderacre – Grupo Wong (220,000 ha), Grupo Bozovich (150,000 ha) and Green Gold Forestry (<100,000 ha) are examples of such firms. Some smaller manufacturers with an orientation to European and U.S. markets are also engaging in concessions, but others such as CFI SAC have opted to not invest in concessions. Such firms find no shortage of wood and state that all of their wood comes from legal sources with the appropriate paper work.

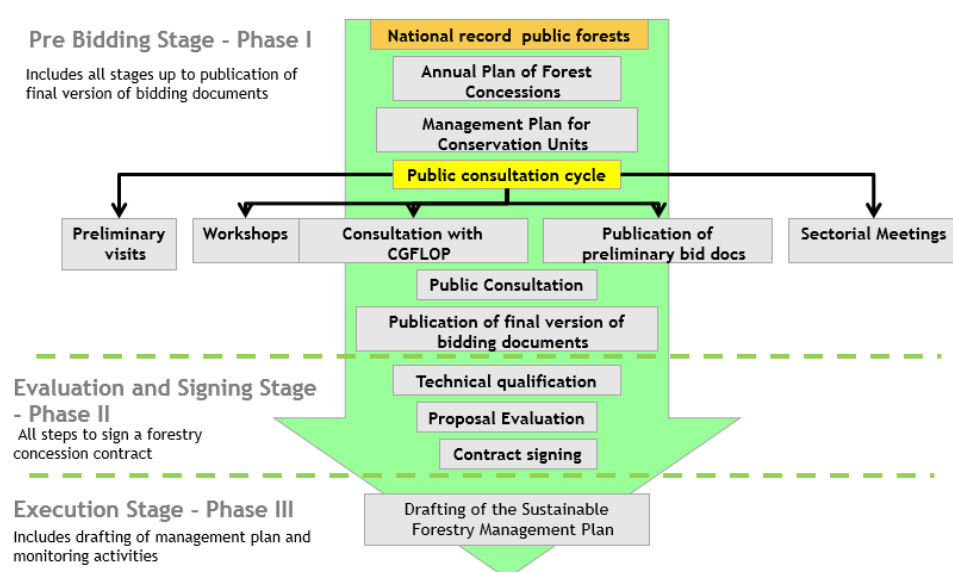
In 2005, Suriname had 200 small logging companies and 68 sawmills with a productive capacity of 500,000 m<sup>3</sup> (it is not known how much wood was actually being produced). Roughly 200,000 m<sup>3</sup> (40%) was derived from concessions with the remainder from communities, subsistence farmers or illegal sources (ITTO, 2005).

## 6. Operational Details

### A. Legal and administrative

This section of the report highlights the main legal and administrative aspects of each country's concession program. Although there are major differences between the countries, the below schema (Figure 3) of the Brazilian system illustrates in a succinct manner, the general concession-granting process used in many countries. This graphic also highlights how a concession unit is established within the larger context of Brazil's overall concession strategy and within a particular conservation unit<sup>8</sup>.

**Figure 3. Brazilian Concession Granting Process**



(Source: STCP, 2012)

### B. Determining concession location and area

Despite a technically sound system in terms of forest planning and practices, Bolivia did not use a very transparent method for assigning areas to specific companies. While most areas had sufficient volumes of commercial species to justify concessions and were not located within protected areas, there were cases of conflicts with communities (i.e. the defunct Tarama Company). The fact that concessions needed to be approved by the agency for agrarian reform helped keep this type of situation from occurring regularly.

Related to the more recent approach to determining the location of forest management units, one of the reasons that the current government decided to eliminate the concession model is that many of the companies that had been granted areas in the 1990's had political and economic ties that

<sup>8</sup> The detailed public consultation that occurs during the concession-granting process in Brazil is unique among Latin American countries and although one of the reasons why concessions take so long to move forward, is also why few issues occur once the concession is granted.

suggested favoritism. ABT now prefers to simply give the land to communities with traditional rights or new populations that request formal access.

The concession size was largely a function of available commercial volume and the willingness of a concessionaire to pay the government the legally mandated fee (US\$ 1/ha/year). At present, old concessions that have been given back to the government are granted to indigenous communities living in and around these areas, or to new communities that have recently settled there.

The size of Brazilian forest concessions is based on Federal Decree # 11.284/2006 and varies per technical considerations unique to each site, including: species composition, needs of local industry, infrastructure and markets. Within each FLONA, at least one small concession must be available as well as larger areas for high volume production. More than any other country in Latin America, Brazil analyzes site-specific conditions to determine size and location, such as: bidder's annual log consumption, harvest intensity (m<sup>3</sup>/ha) and cutting cycle, area able to provide logs to meet demand, and preservation areas which must be at least 5% of total area. Size categories stipulated by Annual Plan of Forest Concessions are as follows:

- Small – less than 40,000 ha
- Medium – 40-80,000 ha
- Large – over 80,000 ha

The August 2015 example of the Caxiuaçu concessions in Pará illustrate how the government strives to ensure access to different sized areas by both large and small companies. The three management units ranged from 37,000 ha to 52,000 ha to the largest at 87,000 ha with the same commercial volumes of 20 m<sup>3</sup>/ha (MMA, 2015).

Brazil's National System of Conservation Units (SNUC) has two components: Integrated Protection and Sustainable Use. The latter category allows for balanced resource use to complement the "no-touch" nature of the former category, and it is within this land designation that concessions may be granted. Such designation and landscape planning is carried out by the governmental agency, Chico Mendes Institute (known as ICMBio). In both state and federal processes the first step is to analyze data from Brazil's National Public Forest Registry (CNFP) to locate Conservation Units.

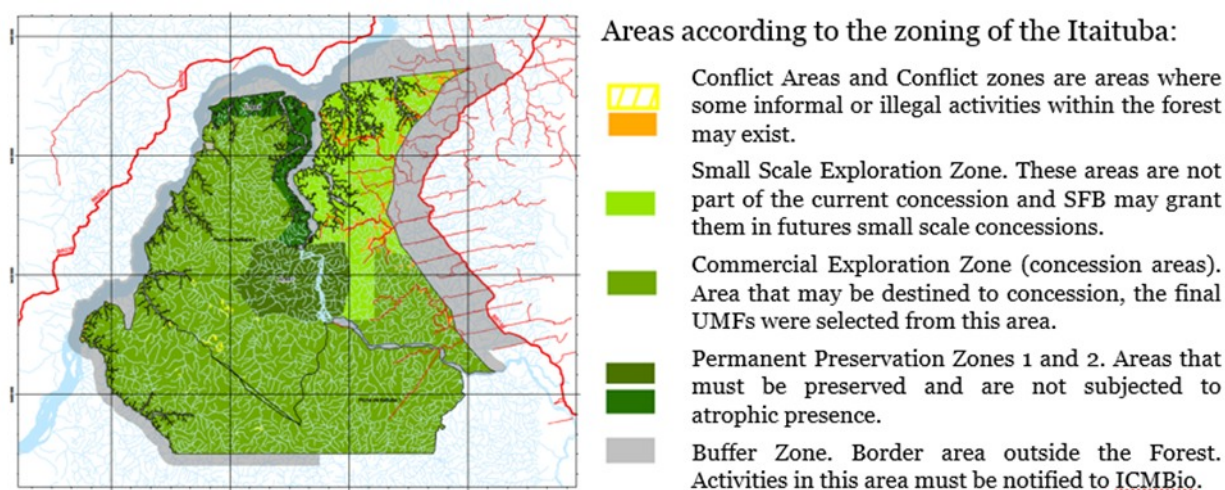
The Annual Forest Grant Plan is a finer-grained, analytical step that allows the Government to determine where and how the concession fits with other uses. CUs are delineated on land that is unoccupied, not designated for traditional uses, not in protected areas, or without difficult operational conditions nor zones of high conservation values where concession management would be problematic. Map 6 illustrates how areas of potential conflict due to competing resource users are delineated in order to reduce potential problems in concession areas in the Itaituba region.

In 2016 alone, the above process was applied to almost 310 million ha of federal public forests of which > 99% were excluded due to issues with indigenous communities, protected areas and areas of communal use. An additional 13,7 million ha were considered legally viable for the purposes of concessions but only 1.81 million ha were deemed feasible across 14 federal areas in 4 Amazonian states (Acre, Amazonas, Pará and Rondônia).

As an example, the State of Acre utilizes a public-private contract model to provide direct access to timber and non-timber resources for local communities that live within the area. For large

companies, Acre issues permits based on volume thus allowing manufacturers to have a more stable supply of logs and work together on extracting different species to obtain the desired volume.

**Map 6. Delineation of different uses and potential sources of conflict in Brazil's Itaituba FLONA**



(Source: Instituto EKOS, 2014)

The consensus in Brazil was that initially, federal concessions were too small to be viable and that state concessions were more appropriately sized to justify the large investment needed to attain economies of scale. Based on SFB data from 2012, the average federal concession size was 41,000 ha ranging from 17,000 ha to 89,000 ha (the average has likely increased). The majority of the state public-private contracts are located in Acre (533,000 ha) where contract size is large, averaging 133,000 ha. Pará, despite being a major wood producing region, only had 215,000 ha under concession in 2012 with a smaller average size of 50,000 ha.

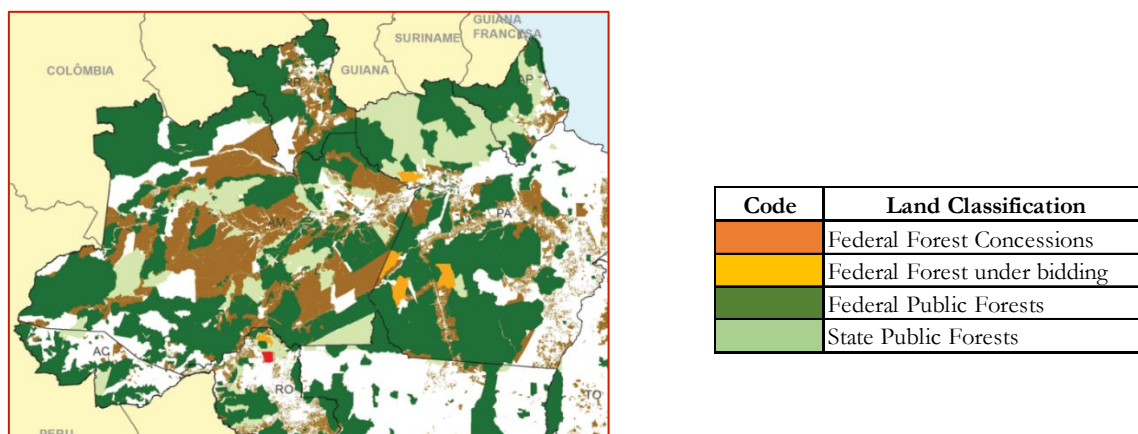
Federal forest concessions in Brazil are located in five main national forest areas (referred to as FLONAS) including: Jamari (Rondonia), Saraca-Taquera (Pará), Jacunda (Rondonia), Altamira (Pará) and Crepori (Para). State concessions are similar to federal concessions in most aspects but are granted and managed by state rather than federal agencies. Brazil passed a new forestry law in 2006 (Lei de Gestão de Florestas Públicas) that established the Brazilian Forestry Service and outlined the role for forest concessions on state lands. Brazil granted its first concessions in 2008 after formal rules were designed and approved in 2006. As is evident in the below Map 7, despite great effort, the area of land covered by federal forest concessions is still very small compared to the total area of federal forest in the Amazon, and even in comparison to state concession lands. While this has increased in recent years, there is still substantial room for growth of concessions in Brazil's Amazon.

From the beginning of Guatemala's program, CONAP utilized a public consultation process to define concession units for communities based on traditional forest uses (Gretzinger and Carrera, 1996). Interested communities or groups created a map of the area within their sphere of influence or interest, and justified their requests based upon traditional use. Agricultural lands are included as long as the permanent forest estate is not reduced and is managed according to CONAP guidelines, thus legalizing agricultural use of state land as long as rules are respected. Protected areas within



the concession areas that are not subject to harvest must also be identified and protected by the concessionaires. More remote forest blocks not easily accessed by roads were put to bid for manufacturers, of which two won industrial concessions that they still manage today.

**Map 7. Federal and State Forest Cover and Federal Concessions in the Brazilian Amazon**



(Source: Alvez, Marcus V., Director of SFB, June 11, 2013)

Guyana utilizes three forest access approaches for different size concessions:

- Timber Sales Agreements (TSA): Areas > 24,200 ha for a 10 to 25-year period with renewal possibilities requiring forest inventories and approved management plans;
- Woodcutting Lease (WCL): Areas between 8,100 and 24,200 ha for 3-10 year periods and renewal possibilities as well and same planning requisites.
- State Forest Permission (SFP): Areas < 8,100 ha for one year and without exclusive rights.

It is unclear how Guyana chooses which areas to grant for concessions but the focus has been on forest which is commercially viable, has minimal operational obstacles, and is not part of a protected area nor contested by communities. According to Bulkan (2014), the government's approach has led to a "land grab" by Asian companies which now have access to almost 80% of the country's public forests.

While permanent production forests (BPP in Spanish) have been delineated by the Peruvian Government, modifications and new areas are presented by the regional forestry departments to SERFOR for approval and subsequent granting. Harvest units accessed via timber concessions can only be located in BPPs and must be granted based on public consultation. The government conducts exploratory studies of potential areas which are complemented by work carried out by bidders to make sure that a specific area makes sense as a concession. Interviewees noted that the government has mentioned its interest in putting an additional 2 million ha up for bid but has not determined where. One problem is that many of the expired concessions are small and it is not economically feasible to manage them unless they are offered in blocks. According to regulations associated with the new Forestry Law, up to three contiguous areas may be placed for bid and obtained by one entity.

### C. Public notification process

Given that in Bolivia, the government is simply turning previous concessions to communities, and there is no bidding process by private entities and public notification is not required.

Prior to bringing a concession to bid, Brazilian law requires that IBAMA provides an environmental license allowing a particular area to serve as a concession. As part of this process, IBAMA conducts a Preliminary Environmental Analysis that includes fauna and socio-economic analyses which once approved, allows the SFB to initiate the concession granting process. SFB first presents the bid document to the public including all relevant details on the concession: resources to be harvested (timber or non-timber), type of guarantee required, obligations of the concessionaire, impacts on traditional uses, and potential land tenure and forest use conflicts. Public inputs feed into the broad Conservation Management Plan developed by ICMBio<sup>9</sup>. SFB provides information on its web-page including data related to upcoming concessions ([www.florestal.gov.br](http://www.florestal.gov.br)). For example, detailed information on how to bid on the Caxiua concession was offered online (MMA, 2015) and distributed to newspapers and the press ([www.florestal.gov.br](http://www.florestal.gov.br) 2015).

Suriname uses a public notification process per standard procedures for all public resources: announcements in official government paper, ads in private newspapers and direct notification of community and industrial bidders. Guyana law stipulates the use of similar public processes but there are claims that its processes are not transparent (starting with the Barama concession granted with little consultation in the early 1990's).

In Peru, bidding processes for unoccupied or rescinded areas are conducted by the regional forestry and wildlife authorities from July 1 to December 31. Notices are published in the official press, governmental webpages, and newspapers. Some interviewees, however, noted that the recent bidding process for rescinded concessions in Loreto was held without widespread notification nor discussion.

#### D. Applicant criteria and scoring process

Given that land is given to communities with historic rights or that have recently settled and are recognized as appropriate owners of vacant forest land, Bolivia does not use a scoring process for selection criteria.

Applicants must be registered in Brazil as formal companies or community associations, but there is no restriction on foreign capital or shareholders. Bidders cannot have environmental infractions, crimes against the environment, nor social debts, and they must pledge that they do not use minors (<18 years of age) in nocturnal, dangerous or unhealthy work, nor anyone of less than 16 years of age except for training programs. A professional forester must independently prepare the technical proposal with support from a qualified team. The financial proposal should be reasonable, and there should be no tax issues with the government. Financial solvency must be proven by showing audited financial statements from the previous two years of operations.

Brazil has the most detailed scoring process of concessions of any of the countries that were analyzed (MMA, 2015). It uses a well-structured approach based on subjective and objective criteria given values by SFB staff to determine a total score. Each member of the reviewing body must

---

<sup>9</sup> In the case of the Itaituba concession, the plan was developed by IFC as part of its support to improve the concession-granting process.

document his/her opinion and while one might disagree with a score, the rationale is available for all to see<sup>10</sup>. Criteria include:

- Highest price in Reais (R\$)/m3 for all species or per species depending on SFB stipulations;
- Technical competency, environmental impact, social impact, production efficiency, and value added;
- Location of processing facility within or near the concession;
- Balance between technical and economic considerations; and
- Productive potential.

The Guatemalan model is unique in that most of the concessionaires were identified prior to determining the concession area rather than being bid upon by various bidders (since most were granted to communities with a long-term, well-documented, and publicly-accepted use of a particular area). The conceptual starting point was not a government wanting to grant public resources simply to generate revenues but rather recognizing that long-term inhabitants had an inherent right to the resource and were best situated for protecting the same. Some of the criteria used to ensure that a particular community would have a successful concession included: sound plan developed by professionals, agreed-upon area without conflicts, adequate volumes of commercial species, agreement of community members, and a documented ability to pay.

Minimal information could be found on how the Guyanese government evaluates concession bids although successful bidders must present full management plans (> 5 year period) and annual operating plans prior to initiating operations. Communities must present requests for areas by group (i.e. as logging association), their assets must be registered, the available area must be clearly specified, a bank account must be functional and they must pay their area-based fees. For industrial concessionaires, in addition to approved planning documents based on legitimate inventories, the company must show a proven ability to engage in forestry wood products processing. Firms must also deliver environmental and social impact assessment, as well as a Business Plan.

Peruvian concessionaires must prove that they have the financial resources to invest in a concession and the technical / market knowledge to make a concession succeed. These qualifications are more important than in the past since many of the country's first concessionaires were speculators with little wood or forestry experience. Peru is now putting greater weight on a bidder's installed industrial capacity, track record in the sector and financial wherewithal. The recent reallocation of expired or rescinded concessions to 25 bidders in Loreto, all of whom had extensive industry experience, illustrates how the government is prioritizing these criteria. Applicants must not have penal records for environmental crimes, crimes against the public good, or crimes per SERFOR regulations. Bidders cannot have rescinded concessions within the past 5 years. Bidders must present the results of their exploration of the clearly defined concession area with the broad outlines of their proposed management.

## E. Contract period

---

<sup>10</sup> The maximum amount of points which a bidder may obtain is 1,000 divided between technical (600) and financial (400). No bidder may win more than two concessions in a particular bidding process.

In Brazil (as in Peru), 40 year contracts may be used, but most have been for 30-year periods. Bolivia has contracts up to 40 years. Guyana's contracts range from 3 years for short term harvests to 20+ years for long-term concessions over large areas > 24,000 ha depending on the access model used. In Suriname, although concessions initially varied in length between one and 20 years (it is not clear how time periods were chosen), the Surinamese government has been promoting longer contracts up to 25 years.

One of the problems in Brazil has been the rigidity in contract language. Given the lack of detailed information on the forest concession area per se and changes in both technology and markets, a 40-year contract needs more allowances built into it to change and modify things as circumstances change.

In Guatemala, once a concession area is approved, an inventory of the entire forest is conducted, followed by a management plan and EIA developed with standardized methodologies. Upon acceptance of these documents, a 25-year contract is written to define rights and responsibilities.

In all countries reviewed, contracts are renewable and maintained as long as the concessionaires pass annual field inspections made by the appropriate governmental agency. Additional reviews are made prior to approval of contract extensions.

## F. Rights and obligations

No concession in any of the countries grants land title, but in all cases, they legally provide communities and companies with the right over most resources within the area as long as they follow use rules and protect the forest from conversion to other uses or degradation.

For example, the Brazilian government always maintains ownership of, and responsibility for, the concession, but concessionaires can utilize all resources except for carbon (the sale of CO<sub>2</sub> credits are reserved for the state) and petroleum (as is the case with virtually all countries worldwide, oil and gas as subsurface resources, are always separate from above-ground rights) as long as they follow specific rules related to the management of the same. Concessionaires must pay for their own infrastructure, but any investments made in roads or buildings become state property upon finalizing the contract period and do not remain with the concessionaire (nor does the state need to reimburse the concessionaire).

Guatemala's concession procedures distribute responsibilities, benefits, and rights among the different governmental, private and community players (CONAP, 1994; Synnott, 1994). As a semi-autonomous entity with a clearly defined geographic and technical role, CONAP establishes the rules, oversees concession granting, and supervises compliance. Community members and contractors implement management activities in the field. Legally-established non-profit organizations or approved consultants are responsible for providing technical support to community concessionaires. An example best illustrates how this approach works. Communities prepare concession and forest management planning documents with a designated organization or professional to attest to numbers and projections. The community (or company) concessionaire is responsible for clearly delineating boundaries and marking the area with legible signage, as well as implementing the harvest. The government, however is responsible for reviewing compliance with

regulations, and removing illegal invaders or forest users, since the area ultimately belongs to the state.

Whereas some governments have separated concession-granting functions (planning, guidelines, inventories, and administration) from the monitoring of the same (Brazil and Peru), others such as Guyana, have taken a more traditional approach to housing these “carrot and stick” functions under one roof. Guyana is also the only country with a professional wood products development, marketing, lobbying and educational organization (FPDMC) that works closely with the federal agency responsible for concession management. While some might consider this an over-emphasis on timber at the expense of other resources, it does show the importance of wood to the country and provides great benefit to concessionaires.

As highlighted by interviewees in Peru, the lack of governmental protection of concessionaire rights is a major disincentive to would-be bidders. It is easier and cheaper to buy access to wood in community or private holdings rather than assume all of the obligations expected in a concession (i.e. if people invade a concession, it is the responsibility of the concessionaire rather than even the government *per se*). The case of the Von Humboldt, CFA and Green Gold concessions show that concessionaires are required to assume costs related to overlapping land claims or must pay for log transport rights to pass through communities (even for public roads). An unusual obligation in Peru is that the concessionaire is required to implement extension and education activities with local communities to promote sustainable forestry.

#### G. Performance monitoring

In Brazil, annual forest operation monitoring is conducted by IBAMA which can visit a concession at any moment without previous notification. IBAMA maintains a national database on wood produced by all concessionaires in each state which is updated regularly on volumes produced and transported by each operation. Independent auditors (i.e. certification bodies) may carry out the annual audit in an independent fashion. In Pará and Acre, state governments utilize other entities to carry out these respective roles.

For Guatemala’s concessions, monitoring is conducted by independent organizations, which are partly funded by income generated from the concessions as well as continued support from international donor organizations. This delegation and distribution of roles minimizes dependence upon the government and reduces opportunities for corruption. CONAP approves proposed harvests prior to the felling of trees by concessionaires, and audits the results in the field on an annual basis. These visits are legitimate and document the status of the concessionaire’s harvest in terms of species, volumes and sales. Each concessionaire must present basic financial reports related to the harvest to the government that is used to charge the annual tax based on area for using the concession, and volume for amount of production (Santos, 2015).

Guyanese law states that the GFC will monitor compliance by the concessionaire with the approved management plan and the Timber Harvesting Code but no information was obtained on exactly how these evaluations are conducted nor what they focus on. Guyana has developed, however, a well-regarded timber tracking system that has been in operation since 1999 (ITTO, no date). The government has established over 25 stations throughout its forest estate to ensure that

concessionaires are accurately tagging trees prior to felling and affixing the corresponding tags on logs (this is used on both concession and Amerindian lands). Additional work has focused on establishing a bar-code system and a UK-based non-profit has helped develop a voluntary tracking system to meet the interests of different purchasing countries (Guyana Legal Assurance System).

In Peru, 45 days after the completion of the annual harvest, the concessionaire must present a summary of activities realized, volumes and species moved and other information as per SERFOR stipulations. On-the-ground monitoring of the operations is carried out by OSINFOR. The task for OSINFOR is a difficult one: of all 3.2 million hectares of concessions granted in Loreto, almost 77% are inactive, sanctioned, expired or otherwise no longer functional; 12% are being reviewed for non-compliance, 4% have been evaluated and an additional 10% are programmed for supervision.

While OSINFOR has been training indigenous communities, signing agreements with local governments and federations, sanctioning “low-hanging fruit” and publicizing the errors of high-profile companies, they seldom target the more difficult operators that often work out-of-sight and are the most notorious violators. For the case of Loreto, only 74,429 ha of the >790,000 ha still functioning have been monitored. OSINFOR is indeed fulfilling its legal mandate by closing concessions that do not comply with regulations, but it has also created perverse incentives whereby vacant concessions without any active management are oftentimes subjected to illegal logging. Community operations are also not supervised as much as industrial concessions and a considerable, un-documented amount of wood comes from community operations thus providing cheap fiber that competes unfairly with concessionaires.

#### H. Rescission of contract and fines

In Brazil, the following conditions can result in cancellation of the concession: end of contract period, lack of compliance with terms of contract, non-compliance with management plan, lack of payment of fees, failure to comply with penalties, inhuman working conditions or forced labor, death of concessionaire, or return of the concession to the state. There are no concessions that have yet been rescinded. To transfer a concession to a new owner, the previous contract must be paid for and all obligations cleared prior to this occurring.

Guatemala enforces failure to comply with the major terms of a concession contract by cancelling the concession; this has occurred with three communities that had flagrant violations. Concession agreements may be revoked if the community does not follow the management plan, lacks operating capacity, stops operations without just cause, or declares bankruptcy (Johnston and Lorraine, 1994). Prior to expiration of the allotted concession period, CONAP must renew the concessionaire’s request for an additional contract unless the community has repeatedly committed infractions (CONAP, 1994).

It appears that few, if any, of the large forest concessions primarily managed by foreign investors, have been taken away from the owners in Guyana. Regulations clearly note what actions may result in the cancellation of concessions.

Peruvian companies can also lose their concessions or be fined if they provide false information under which activities are actually taking place, make unauthorized harvests, cause unnecessary negative impacts, convert forest to other non-forest uses without permission, or do not make

agreed upon payments or investments. The main reason that Peruvian concessions are cancelled is due to inactivity and inability to pay. Concessionaires are required to make annual payments regardless of whether they harvest and under economic duress, many choose to not pay, thus voiding their concession. For extreme cases where the concession is rescinded or the company no longer wishes to operate, the area is returned to the government. Theoretically, local authorities protect the area and ultimately allocate it to other concessionaires. The case of CFA shows how this approach does not work: the company went bankrupt, the forest was returned to the government but no real protection is occurring.

## I. Financial

### 1. Guarantees

In Brazil, guarantees must be provided to the government against possible environmental damages and performance issues. The values of such bonds can range from 40-80% of the total reference value<sup>11</sup> for the contract. Usually, the overall concession performance bond is based on 60% of the reference value defined as:

Bid price (US\$/m3) x Annual harvest area (ha) x Harvestable volume (m3/ha) (IFC, 2015).

Assuming a US\$ 30/m3 bid price for a 40,000 ha concession (2,000 ha harvested annually) with 15 m3/ha, the bond would equate to: US\$ 540,000 (US\$ 900,000 x 60%) to be paid by: cash deposits, property titles, guarantee provided by registered insurance company, or bank note<sup>12</sup>. At the start of the bidding process, the applicant must also pay a bid bond to prove seriousness of intent and compliance. The value of such a bond is US\$1/hectare which is returned upon the completion of the bidding process.

Guatemalan community concessionaires must pay a one-time fee (less than US\$ 1 per hectare for agricultural and forest lands) over a ten-year period, a performance bond for 1% of the total bid, and standard production-based taxes for timber and non-timber products per m3 by species.

Peruvian concessionaires must provide a deposit to cover potential fines, damages or non-compliance with regulations. The guarantee can be either an irrevocable bank note, lien on a property, insurance policy or cash deposit. Not all concessionaires have provided guarantees and the government does not always require them. Article 35 of the new Forestry Law regulations states that the forest resources embodied in the concession can be used as a guarantee for loans and credit by the concessionaire.

It is not clear how concession guarantees were structured in Bolivia, Guyana, Suriname and Venezuela.

### 2. Pricing

---

<sup>11</sup> Reference value is equivalent to the value of one year of concession revenues based on estimated volumes and prices.

<sup>12</sup> The state of Pará charges 10% of the total value of the operation during the concession period as a performance bond.

Bolivia charges concession fees based on area harvested each year via the Patente de Aprovechamiento (essentially the access right or lease fee) and volume harvested via the Tasa de Regulación Forestal (TRF) which is calculated per volume actually harvested. Community operations only pay the access fee but not the TRF based on volume. The government reduced the cost of access fees four years after it had implemented this approach since the costs of implementing all concession requirements were higher than anticipated.

Federal concessionaires in Brazil are charged based on the volume extracted per price established by the government on species value. A minimum annual value (VMA) which is a percentage of the referential contract value (VRC) can be charged, depending on the minimum volume extracted. This price does not vary by amount of wood harvested and must be paid annually. For example, for the first year of the Jacundá concession, the VMA was 5% of the VRC. In year two, the VMA was 15% of the VRC and climbed to 30% of the VRC by the third year. This approach is sympathetic of the concessionaire's need to incur great capital expenses in the first years.

Per SFB Resolution # 2/2011, prices can be based on the value of individual species groups or an average price for all species. SFB reviews prices in the market where the concessionaire will product lumber from these species and calculates the relevant fee by subtracting operational costs from the market value (i.e. stumpage)<sup>13</sup>. In both federal and Pará concessions, the user must pay for the right to operate a particular area based on the volume extracted.

All costs associated with the preparation of the concession bidding documents (delimiting boundaries, forest inventory, environmental license, overflights, consultative process, field visits, etc.) are charged to the winning bidder. These costs vary greatly from US\$ 115,025 for the Jacundá concession to US\$ 505,108 for the Saracá-Taquera concession. There are other costs related to transporting logs, providing benefits to communities and obtaining other environmental permits, but these are varied and a function of each particular situation.

Minimum bid prices were based on research conducted in a 150 km ray around the forest to be granted. Later on, in 2015, an innovative effort to improve pricing was undertaken by IFC based on a realistic cost structure and a discounted cash flow analysis rather than simply a stumpage approach<sup>14</sup>.

The actual methodology used to determine the concession price for the Guatemalan communities in the mid-1990's is unknown. Concessionaires are required to pay on an annual basis and do not receive approval for harvest or transportation of logs if they do not comply with payment schedule.

Guyana has long been criticized for its extremely low concession prices (< US\$ 0.20/ha/year) and although exact prices were not obtained, recent forestry legislation does explicitly request that prices be above the standard market rate (although it is not clear how this rate is calculated).

All Peruvian concessionaires are required to make annual payments on a per hectare price (US\$/ha) per offered bid price. Every bidder has the ability to determine his or her own stumpage costs and subsequently, price to pay the government based on what their particular cost of operations would

---

<sup>13</sup> Pará State requires monthly payments based on volume produced, and Acre also charges fees based on volume.

<sup>14</sup> For revenues generated by the payments of concession rights, 70% of the payment goes to SFB and 30% goes to IBAMA to fund their respective functions.



be based on harvested species. Concession prices have been wildly variable and not always based upon an accurate estimation of operating costs. While such errors were the fault of concessionaires and their technical advisors, the impact of the same is felt by the country since the high percentage of failed concessions effectively means that most of the same are subject to uncontrolled entrance (“nature abhors a vacuum”). Article 25 of the Reglamento para el Manejo de los Recursos Forestales mediante Concesiones notes two types of payments that must be made by concessionaires:

- Access right to area- 0.01% of the UIT<sup>15</sup> for entire area paid at harvest end and prior to initiating new harvest.
- Price of product harvested- based on the stumpage value of the species harvested.

Although SERFOR is analyzing the possibility of other methods for determining prices (i.e. fixed rates per m3 of each species) regulations still are based on a classic stumpage-based price per m3, but does introduce the vague concept of: “the natural state of harvested species”. This value would be based on: degree of threat, species abundance, potential product, market demand and other variables, and would be determined by the local government with SERFOR support on an annual basis. While this approach may appear simpler, it is actually more problematic and unfair to certain companies since the government does not consider financial results in the calculation of its concession prices.

In terms of how payments are structured, only a recently bankrupted concession company presents a good example. Although regulations initially required companies to make payments prior to harvest, CFA was allowed to make quarterly payments as its harvest developed. Regional governments also allow companies to pay on a quarterly basis as production unfolds; this flexibility makes the entire process much more feasible and practical.

### 3. Incentives

The Bolivian government motivated companies to obtain FSC certification that required compliance with standards more difficult than governmental regulations by offering a 10% discount on access payments. An additional 30% could be discounted based on the company’s designation of ecological reserves. This program is no longer functioning, but the ABT does provide incentives to those communities and companies that have adopted wood-tracking programs. Such operations receive preference for the approval of planning documents and harvesting licenses. Those with a maximum score greater than 70 points according to the Bolivian system obtain easier access to finance, are exempt from field inspections, and are considered high priority for receiving governmental preferential purchasing of their wood products (WWF, 2015). In addition, Bolivia’s Production Forestry Credit program is particularly interesting since it offers loans to cover all operating expenses ranging from inventories and planning documents, to mills and trucking with a one-year payback period. Loans for the overhauling or replacement of equipment have a 10-year payback period. Guarantees can be based on the volume of wood in an approved Annual Operating Plan, a sales contract, or forest insurance (WWF, 2015).

Brazil has a progressive incentive system that reduces annual payments to help concessionaires cover the costs of managing large tracts of forest. Companies that implement the following actions

---

<sup>15</sup> *Unidad impositiva tributaria* or a sort of tax unit.

also are charged lower fees: monitoring of forest dynamics, reduced impact logging, generating employment in concession area, supporting research, implementing conservation initiatives, developing gender-neutral affirmative action strategies, and utilizing high quality control systems. For the case of the Crepori concession, the Brazilian government used two types of indicators to evaluate bids (SFB, 2013):

- Classification (requirements) related to quality management system for forestry operations, investment in local infrastructure and community services, modern forest management technologies and local processing;
- Scoring (additional) degree of value-added (15%), investments in the protection of the management unit (10%), generation of employment (10%), worker training (5%), social responsibility and worker safety measures (5%), utilization of wood wastes (15%), and quality control system in the mill (7%).

The aforementioned percentages indicate the importance placed on the efficient and profitable processing of raw materials which also points to the previous point made regarding the government's recognition that concessions are needed for industrial development in remote, forested areas. The brilliance of the government's approach is not obvious unless one looks deeply at the individual criteria. One can see for example that bidders illustrating a more efficient approach to logging will get additional points or weight in the scoring process since their approach will result in less machine time to remove the same volume, thus resulting in less carbon emissions.

While natural forest management concessions in Guatemala have never had a strong incentive program like those found in Costa Rica or Peru, concessionaires were the recipients of many subsidies provided by donors, government and non-profit organizations. CATIE, the Rainforest Alliance and USAID have been particularly reliable, long-term supporters of the concession program and key to its success.

Apart from the strong support that concessionaires receive from the government on technical and production related themes, Guyana does not offer incentives to concessionaires. Given the low prices paid for access rights and the strong demand for concessions in Guyana, the government has preferred to increase taxes on the export of logs.

The Peruvian government provides an incentive to concessionaires by allowing for reduced concession payment rates up to a maximum of 70% discount if the company:

- vertically integrates the concession with manufacturing on-site (25% reduction in payment shown by > 70% of primary processing occurring in or near the concession or 20% of secondary processing);
- establishes voluntary conservation areas within the concession (10% reduction in payment when 10% of the concession is allocated to protection; 20% reduction in payment if 20% allocated); or
- obtains FSC certification (25% reduction in concession price for full FSC certification and 5% reduction in harvest payment if concessionaire has initiated the process).

The country's new regulations reference the establishment of a forest sector promotion and financing strategy that would receive funds from the Ministry of Agriculture (but also states that no new allocations would be necessary since funds should come from international donors). Article 123

suggests that public institutions could utilize the legal or certified status of wood supplies as a criteria for selection in the purchase of wood products (but has no legal standing in official procurement processes).

Peru's longest-standing incentive is Law #27037 (Promoción de la Inversión en la Amazonía) which exempts companies located in the Amazon from paying taxes on goods sold in the Amazon for local consumption (i.e. sale of logs or lumber to a manufacturer), first sale of a construction project (i.e. sale of a mill), or services provided locally, and a 5-10% reduction on taxes on earnings. This benefit applies to any company with a concession or not. Forestry Law # 29763 states that registered forest concessions, harvest permits and other official authorizations for forestry activities may serve as legal guarantees for financial or legal obligations.

#### 4. Financial monitoring

Given the need for concessionaires to be profitable enterprises that sustain their production as well as generate sufficient earnings to pay their governmental fees, it is surprising how few governments monitor the finance of concessionaires that are using state resources<sup>16</sup>. Governmental agencies for neither Peru nor Bolivia require anything from concessionaires other than a minimal discussion of the costs and benefits of the operation, or a generalized net return estimation.

Personal experience has shown that most concessionaires monitor their cash flow with basic systems and oftentimes have internal systems of varying low degrees of rigor and reliability to calculate cost structures. Traditionally, this has been a weak point of many companies and in Peru and Bolivia, for example, concession contracts do not require accurate cost tracking or regular financial statements. For this reason, well-known companies such as Aserradero Espinoza, CFA, GGF, and SLV have gone bankrupt, sold operations, or had reoccurring issues with investors.

In the mid-1990's, Bolivian concessions were much more sophisticated in their cost tracking due to the fact that the majority had already been engaged for many years in the wood products industry. This has changed considerably now that communities are managing the majority of the productive public forests in Bolivia since few have sufficient training and access to systems to efficiently track costs or financial returns.

There are some impressive exceptions to the rule. Guatemala conducts a particularly rigorous monitoring of costs and revenues from concession operations. CONAP reviews basic financials and bank accounts to make sure there is consistent financial reporting and that user fees are received according to Law. This deep involvement in finance may be one of the reasons that Guatemalan and international financial institutions have loaned money to community operations as well as larger companies focused on providing services to community forestry. Brazil is now using a robust data base on realistic costs from specific concession areas, and market prices for species, products and quality of products to determine annual fees.

#### J. Technical

---

<sup>16</sup> This observation is relevant for certifiers as well: very few FSC certification reports show more than a cursory examination of an operation's financial viability, much less the reliability of its cost structure, cash flow or financial projections.

## 1. Products and services

Timber is the main product which Brazilian concessionaires can bid on; mining, commercial hunting and fur-trapping are not allowed. Wood in both log form and residual matter from the harvest as well as non-timber forest products may be used depending on the approved management plan. Tourism in the form of hotels, adventure sports and nature observation (i.e. birdwatching) is allowed. CO2 belongs to the state, as do genetic resources and water, and concessionaires cannot engage in REDD+ nor VCS projects. Mining by a forest concessionaire is not allowed (although there are cases of overlapping timber and mining concessions).

Timber products are the main economic driver behind the Guatemalan concessions, but non-timber products can be included in the management plan as well (as is actively done by the communities of Carmelita and Uaxactun, for example).

In Guyanese concessions, the dominant economic driver is timber (and primarily from only 2-3 species) despite the fact that there are good volumes of palm heart (*Euterpe oleracea*) that is exported, and vines similar to rattan (*Heteropsis flexuosa* and *Clusia* sp.) that are exported for furniture.

In Peru and Bolivia, timber is also the most common product included in most concessions. There are few examples of concessionaires that actively manage forest for multiple products, with the exception of Madre de Dios (Peru) that has Brazil nut (*Bertholletia excelsa*) concessions for small landowners. Peru also allows concessionaires to access genetic resources for their own use but not for patent rights.

Some Peruvian operations are based on multiple products such as the 11,000 ha concession designed to create three revenue streams: tourism and CO2 credits in alluvial soils along streams, and timber production on higher ground (Nature Services Peru, 2014). Peruvian concessionaires can obtain financial benefits by protecting environmental services such as CO2 and several have already done so (i.e. Grupo Wong on the Maderacre concession). This is contrary to Brazil's unusual policy which explicitly prohibits the ability of concessionaires to obtain revenues from GHG emission reductions or mitigations.

## 2. Forest inventory protocol

The inventory methodology utilized in Brazil is standard for most tropical operations with the exception that it uses an unusually large number of commercial species to determine statistical robustness which results in needing fewer plots and less relevance for those fewer species of commercial interest.

In Peru, SERFOR has established clear guidelines on how to conduct inventories per internationally accepted methods. Unfortunately, there are few experienced foresters willing to conduct inventories under difficult conditions and most companies hire recent graduates with minimal experience.

Overall, inventory methods used in Latin America are consistent, technically justified and appropriate. The majority use a stratified sampling method where large, rectangular plots are dispersed throughout the forest based on statistical variability. Data is gathered on all species, not

just commercial ones, and includes: species, estimates of the total and commercial height, measurements of diameter at breast height, perceived log quality and others (i.e. vines, hollowness, etc.). Topographic, soil and water conditions that affect tree growth are also noted. Subplots of regeneration and smaller stems are also measured, albeit at a much lower level.

The outstanding issue is related to the experience and honesty of the individuals carrying out the inventory. Most forestry professionals, as they age and simultaneously become more experienced and competent, prefer to spend less time in the woods carrying out inventories. Others have been known to create false databanks in order to justify the harvest of wood from different areas but sold under permits issued for other areas.

### 3. Management plan

Management plans are fairly consistent in terms of content across the region and often include a wealth of information that although of academic interest, is not necessarily relevant to managers nor decision-makers. Relatively few management plans give sufficient attention to how annual allowable cut levels are established in order to ensure subsequent harvests. Guatemala has done a good job with this area due in part to strong support from the Central American Tropical Center for Research and Training (CATIE) which has accompanied the concession process since the early 1990's. Guatemalan management plans include uses for three different parts of the concession: timber production, strict preservation, and agriculture. They also detail the timber cutting schedule and cycle, the annual allowable cut, commercial species of interest, minimum cutting limits, silvicultural treatments, and protection strategies (CONAP, 1994).

Brazilian management plans detail typical technical requirements including: inventory protocol, summarized results of inventory (by species and commercial groupings), description of main geographical constraints to management, proposed road network, justification of cutting cycle and harvest levels, proposed silvicultural treatments, and mitigation methods for predicted impacts. These are conducted by the concessionaire post approval of the concession by SFB.

Once the management plan is approved, the concessionaire must conduct a commercial census and prepare an annual harvest plan after the gathering of field data on all commercial species. No EIA need to be developed since the government considers the sustainable forest management plan sufficient to comply with this function.

Several types of management plans may be developed by Peruvian concessionaires<sup>17</sup>:

- General Forest Management Plan (Plan General de Manejo Forestal - PGMF) which is complete, long-term plan for managing timber based on a detailed forest inventory;
- Intermediate Forest Management Plan (Plan de Manejo Forestal Intermedio - PMFI) which is a combination of both strategy and operations planning for non-timber, ecotourism or conservation; and
- Annual Operating Plan (Plan Operativo Anual - POA) which is a 1-3 year plan for harvesting based on guidelines established in the PGMF.

---

<sup>17</sup> Other variants exist to consolidate several operations into one or for low-intensity operations.

Prior to initiating operations on a concession, the concessionaire must have a completed and approved PGMF and POA based on SERFOR's technical requirements. In reality, many manufacturers without concessions do not prepare management plans and in general, operate from one annual cutting plan to another. While this is logical given that they have no investment in the forests per se, the lack of a broader vision on maintaining a stable flow of wood may lead to over-capacity. This is less of an issue for those companies that have invested in quality management plans based on precise information. Per regulations, management plans in Peru include components common in most tropical forest countries:

- Description of area and proposed zoning for production and conservation activities;
- Definition of species of commercial interest;
- Description of proposed management system, silvicultural treatments and harvest activities;
- Maps and timelines; and
- List of proposed activities.

What is surprising is that despite the major expenditure of time and money in the mid-1990's to develop simplified management plans focused only on the essential issues, most governments now seem to be advocating overly-detailed documents that only increase costs and time dedicated to writing documents.

#### 4. Cutting cycle

In general terms, cutting cycles in Latin America have been based loosely on the frequently quoted estimate that trees will grow 0.5 cm/year in terms of diameter. This figure is applied similarly to all species and sizes and assumes therefore that in a 20 year period, a tree will grow 10 cm in diameter. With a 50 cm minimum diameter cut limit, any tree in the 40-49.9 cm diameter class is assumed to be harvestable by the time the 20-year cutting cycle is over. Cutting cycles are usually between 20 and 35 years.

Although the rotation age concept is not relevant for the multi-age tropical forest, and not thus discussed with regularity, most estimate that three cutting cycles would be required before a tree reaches maturity (i.e. a small seedling left in the forest at harvest or that germinates post-harvest would take 60 to 105 years to reach adulthood and be ready for harvest).

Depending on the relative volumes of different commercial species, cutting cycles are adjusted and areas are estimated. The total commercial area is divided by the cutting cycle to determine number of hectares per annual cutting area.

In Brazil, cutting cycles for mechanized operations are stipulated by law to be between 25 and 35 years although most are for 30 years. Operations without mechanized skidding can have cutting cycles down to 10 years. The states of Pará and Acre utilize similar periods. SFB utilizes standardized increment figures per hectare (0.86m<sup>3</sup>/ha/year) to calculate annual allowable harvests for mechanized operations. This reduces discrepancies and ensures fairness in terms of volumes permitted (although it does not account for volume differences between sites). Concessionaires are allowed to present monitoring data that justifies different volume figures. In summary, concessionaires use the following average SFB productivity figures to determine harvest intensity:

- 0.86 m<sup>3</sup>/ha/year for a CC between 25-35 years (an operation with a 30-year CC can harvest 25,8 m<sup>3</sup>/ha)
- For non-mechanized operations, 1 m<sup>3</sup>/ha can be used for a CC < 10 years, thus yielding 10 m<sup>3</sup>/ha.

The average volume harvested in the Jamari and Saracá-Taquera concessions increased from 13.5 m<sup>3</sup>/ha in 2012 to 13.9 m<sup>3</sup>/ha in 2013 (authorized volume based on concessionaire's request) (SFB, July 2014). This was a considerable increase over the 2011 average of 7.35 m<sup>3</sup>/ha.

SFB has established different categories for commercial species for which prices are set once based on the selected proposal, and it is adjusted once in a year according with the inflation rate. It utilizes a generous list of potentially commercial species (> 100) that has the undesirable impact of allowing foresters to conduct inventories of a lower intensity to obtain statistical robustness than if the list only included species that the concessionaire was truly planning on harvesting. This increases the risk to investors since there is decreased likelihood of accurate volume estimates for their species of interest.

In Suriname, most concessions use 20 to 25 year cutting cycles. The total standing volume of a generous list of commercial species (more species than will usually be cut in actuality) is divided by the cutting cycle to establish the maximum volume available for harvest. Seed tree, structure, and conservation requirements result in area, and thus volume deductions, and only volumes over a pre-determined minimum diameter cut level can be cut. This approach is similar to that used in other countries, such as Guatemala, Peru and Bolivia that utilizes an area approach based on 20, 25 or 30 year cutting cycles chosen by the concessionaire.

The question subject to most debate is: what is the correct cutting cycle? This is based on data for growth, yield and mortality as documented in permanent monitoring plots or, as in the case of Brazil, per pre-established figures that the government establishes (this is the only country that provides a fixed, assumed target per hectare). Very few operations use growth and yield data from their own permanent plots to calculate the cutting cycle.

## 5. Silviculture

Forest management for most concessions in Latin America is based upon a polycyclic felling system common in the tropics. For such uneven aged forests, future harvests of the same cutting block are planned to occur when advanced regeneration and smaller trees from lower diameter classes reaches marketable size. Although early research looked at silvicultural treatments to address the ecological requirements of threatened, high-value species such as mahogany and cedar that regenerate most effectively in the high light conditions prompted by disturbance (Putz, 1993; Snook, 1993), little modifications to the "minimum diameter limit cut-percentage leave tree" approach have been made on the ground. Diagnostic sampling, a tool originally developed in Malaysia, had been modified for use, for example, in the Petén to define silvicultural prescriptions but has not been used operationally (Stanley and Gretzinger, 1996).

Virtually all concession programs require a standard approach to silviculture based on minimum diameter limits (established by the government) for species and species groups, coupled with a required percentage of commercially viable trees to remain standing post-harvest (usually 10-20%),

and a cutting cycle that stipulates no entrance in cutting block until 20, 25 or 30 years after harvest. Basically no replanting or thinning is conducted by any concessionaire.

In Venezuela, a high harvest intensity has proven problematic despite long cutting cycles of 30 to 40 years. The main commercial species, *Pachira quinata*, was virtually absent from forests that had been harvested 13 and 19 years previously. Enrichment plantings had been used in these forests as well but had resulted in very slow growth rates (0.027 m<sup>3</sup>/ha/year). Enrichment plantings were also unsuccessful in Guatemala's Petén region and as a result are not utilized in forest concessions; nor are they found in other concessions in Latin America.

In Brazil, at least 10% of all trees of all sizes of a particular species must remain in the forest post-harvest. As an absolute minimum, at least 3 trees per 100 ha with a diameter greater than the minimum diameter limit of a particular species must remain in the forest. Minimum diameter limits are established for many of the species and where no such limit exist, 50 cm DBH is the minimum. Concessionaires are allowed to modify these limits if they can provide data justifying the same. Forest dynamics are monitored via permanent plots on each concession precisely to determine cutting limits for each species. Reduced impact logging is required on concessions and vines are usually cut prior to harvest to reduce impact. Directional felling is advocated but practiced to varying degrees of success. Replanting or thinning is not conducted by concessionaires.

In Guyana, low soil fertility and lack of regular disturbance has resulted in over mature stands of low quality; many trees are crooked or hollow. Stands dominated by 1-2 commercial species are often separated by large areas with very few of the same species in a patchwork quilt effect. In the past, 2-3 trees were felled per hectare with an average yield of 7 m<sup>3</sup>/ha. The national plan allows for 60 year cutting cycles with up to 20 m<sup>3</sup>/ha/year.

## 6. Conservation areas

Brazilian and Peruvian concessionaires are required by law to establish, sign or delimit, and implement lower-impact management activities in areas considered of high ecological value. In Peru, those concessionaires that go above and beyond the minimum requirements, obtain reduced concession fee as an incentive. Bolivia has a similar approach: steep and riverine areas are considered off-limits to logging by law, companies are encouraged to establish other conservation areas that reflect the diversity of the concession, and offer reduced payment fees as a reward.

In all cases, companies are required to protect the entire concession area from invasion, deforestation or similar activities that reduce the value of the public asset. In cases such as Peru, the company must pay for the government to monitor its operations (i.e. any expenses associated with the field visit to the concession are paid for by the concessionaire). This is odd since the company also pays an annual fee to the government that presumably would be used for such expenses.

In Guyana, concessionaires must keep 4-5% of their forest area as conservation areas not available for logging. These areas must be representative of all the plant and animal life found in the concession and surveyed by GFC to verify that the conservation area is appropriate. No harvesting may occur in those areas.



## 7. Relationship to forest policies

This section explores some relationships between the forest concession programs of the reviewed countries and national policies related to two major issues which have always been associated with concessions: social benefits and participation, and independent certification and wood legality.

### A. Social benefits and participation

As detailed previously, the Bolivian government has eliminated concessions from its dialogue and is actively engaged in a process of distributing forest to rural communities, both indigenous and mestizo. This is part of the Morales' administration's policy to favor the rural poor that has resulted in roughly 85% of the country's lands now being in the hands of community, in some cases with private title (WWF, 2015).

After a failed attempt at instituting a widespread industrial forest concession program and in the wake of indigenous protests regarding its Lima-based policies, Peru has attempted to decentralize its forest administration activities and allow for more community forest management. Although recent regulations make no mention of social obligations regarding training, safety, or wages and nor regarding local communities (i.e. hiring, training, investment, processing), Peru's forest policy is establishing regional planning entities, regional implementation authorities (ARFFS), and technical organizations to provide training on community forest management (UTMFC or Unidades Técnicas para el Manejo Forestal Comunitario). The country has also been experimenting with local forestry committees similar to the forestry consultative committees utilized in Guatemala and Nicaragua. These Committees for Forest and Wildlife Management (CGFFS or Comités de Gestión Forestal y de Fauna Silvestre) are an additional layer of community involvement in issues that affect all, such as road access, education and training, and control of illegal logging. Although lack of funds and technical capacity is a problem, the legal framework does envision a substantive role for local governments and communities<sup>18</sup>.

Historically, Guyana has not taken indigenous land use rights very seriously (due in part to its history of colonization and relatively recent independence). The Crown Lands and Mining Ordinances had eroded their land rights and post-independence in 1969, many tribes were surprised to learn that, legally, they did not possess direct rights over the land they had occupied for many years (Bulkan, 2014). As far back as 1861, Guyana had been granting timber cutting permits to non-aboriginal owners on forest that was part of the Amerindian's perceived landholdings. The Forest Act of 1953 made no provision for public consultation and although Amerindian land with communal title was considered private land, similar holdings without title were considered as part of the state's forest estate. While the procedural manual for State Forest Exploratory Permits (SFEPs) prepared by the GFC notes that such permits cannot be granted on lands "occupied, claimed or used by Amerindians" the government does not follow its own procedures (Bulkan, 2014). However, Guyana's most recent policy shift has resulted in 75 community forestry organizations obtaining concessions on almost 500,000 ha of forest. Although allocations began slowly in 1985 with only

---

<sup>18</sup> Community forest in Peru is not subject to concession law but technical requirements are similar. ARFFS approve master plans for the BPPs where concessions are located, and is authorized to conduct exploratory inventories with technical support provided by SERFOR.

1,907 ha granted, since 2011 the area granted to communities has averaged 57,000 ha annually (GFC, 2015). Employment in forest-based community enterprises reached 3,611 people and generated an income of almost US\$ 9 million.

Despite the seemingly positive trend, few communities have experience running forestry enterprises, handling finances, tracking costs or producing a product via an industrial model. Although there are some exceptional cases where communities in these countries have been making good profits from sustainable management, without the type of long-term support offered in Mexico and Guatemala, true advances will be limited.

Guatemala has taken a radical approach to considering the needs of local, rural communities and designed a concession model specifically for their needs. It clearly articulated a social policy to place both rights and responsibilities in the hands of communities and support the same with technical assistance. In the Guatemalan model, requirements for concessionaires to generate social benefits are minimal limited because community concessions are essentially social enterprises that by definition benefit members.

One of the reasons that Guyana and Peru have been motivated to include rural communities into their concession models has been the lack of adequate benefits to local dwellers living in and around the forested areas managed by large companies. The Brazilian model does not include federal community concessions. As a result of this and the social objectives of the government in Brazil, stringent worker and community obligations are required. Unique to Brazil, detailed social analyses are conducted on rural communities to minimize conflicting land holdings.

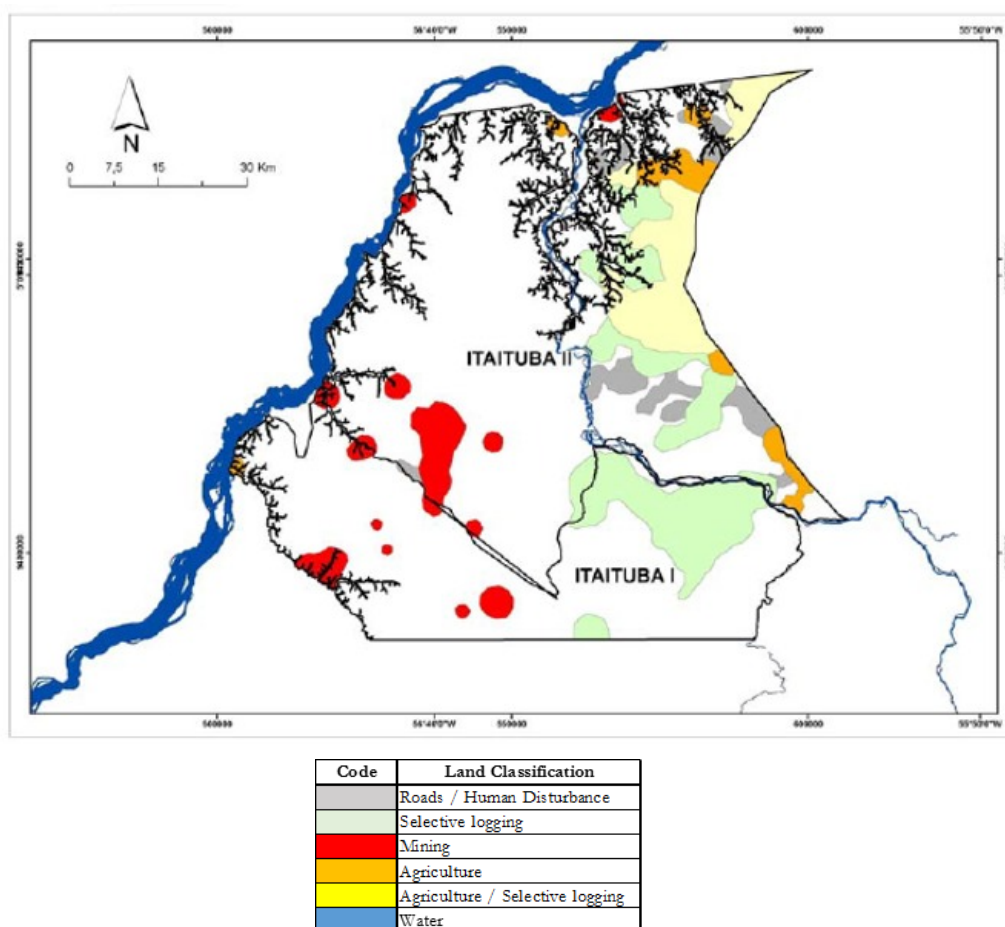
In the case of the Itaituba concession area, IFC interviewed landowners, residents, miners and loggers to determine potential areas of conflict and adjust the concession boundaries accordingly. The following Map 8 shows the results of on-the-ground interviews and remote sensing analysis required under the Brazilian model. Potential areas of conflict due to already established human occupation and forest use (legal or illegal) are used by the government to lay out concessions in a way that reduces potential conflict.

There are interesting examples of community access to forest areas for the extraction of non-timber resources based on historical use patterns. Brazil in particular has a well-known system that developed out of violent conflict over forest use rights in the last century. While not concessions per se, relevant aspects of this model are presented below.

The Brazilian government has shown little enthusiasm to move illegal forest occupants due to politically volatile groups of landless farmers that are prone to engaging in protests. For the case of Itaituba, the government erred on the side of caution by drawing concession boundaries very far from even the smallest of indigenous communities that were illegally occupying land. This is a sharp contrast to Guatemala's deliberate policies of protecting the legal rights to concessions of certain communities from the illegal attempts to occupy or use forest resources where such concessions were located. The Peruvian government has been able to adjust concession boundaries to avoid overlaps or inadvertent conflicts; Green Gold Forestry in Loreto and CFA in Ucayali are two cases that illustrate this ability to negotiate in order to protect the interests of both parties.

## Map 8

Human activities in Itaituba Concession Area, Pará State, Brazil



(Source: FRM Brazil. 2012)

SFB does not grant community forestry concessions on federal lands, although the State of Acre does allow for community concessions based on area. Community concessions that may be granted for the extraction of non-timber resources have different objectives and are referred to as:

- State Projects for Sustainable Settlements (*Projetos Estaduais de Assentamento Sustentavel* - PEAS) or State Projects for Agro-extractive Settlements (*Projetos Estaduais de Assentamento Agroextrativista* - PEAEX) in Para State
- Extractive Reserves (*Reservas Extrativistas* - RESEX) per ICMBio terminology.

Such concessions are designed for traditional communities that subsist on resources such as rubber or Brazil Nuts, or for those who wish to maintain a traditional lifestyle. The reserves are designations where both the land and the resource legally belong to the government but it has chosen to cede access and use rights to a private entity; a user group comprised of individuals with historic use patterns.

Reserves for Sustainable Development (RDS) allow for more extensive use and are not restricted to extractive industries. Acre has a clear and pragmatic approach to community use rights which it grants via: exploration rights for small areas/volumes, management licenses for communities to work on larger areas, and agro-extractive concessions, such as the Chico Mendez concession established for rubber and Brazil nut extraction.

Community-based contracts are not granted via bidding processes and communities are not charged for resource use. They are not concessions in the traditional sense of the word but the government does cede access to public resources to community entities with defined legal objectives, tasks and agreements.

**Note:** Industrial forest operations are based on volume in Acre State per Law #1.425/2001; Pará State only allows for industrial concessions based on area per Law #6.462/2002).

## B. Independent certification

Bolivia was the region's true pioneer in terms of promoting independent certification. With the 1996 Forestry Law, the Bolivian government allowed for independent audits by internationally credible organizations such as FSC to comply with the legal requirement that all concessions be monitored annually. Initially quite successful, changes in politics caused the government to establish its own national forest certification system in 2014 as a response to the high cost, high technical capacity requirements and low improvement rates that it believed characterized the FSC model. Although FSC certification in Bolivia had reached 2.2 million hectares in 2006 (almost 25% of 9 million ha of production forest, the number dropped to 890,000 hectares in 2014 (40% of greatest amount) and is roughly 650,000 ha today (Carreras, 2015).

This new system (the Bolivian Forest Certification and Incentives System - SBCBi) is based on financial and economic incentives to motivate forest users to comply with laws and improve their forestry practices (WWF, 2015). The system is free, obligatory and based on a user-friendly and digitized tool to track wood flow from forest to market and linked to an online platform to provide real-time information on forest management in Bolivia. As noted previously, ABT does not fine or sanction based on this system, but rather uses it to gradually improve operations over time. The European-based Programme for the Endorsement of Forest Certification (PEFC) is preparing to evaluate the SBCBi and work with the government to beef up the community and social aspects so that it can become a mutually recognized system (Carreras, 2015).

Bolivia also hired a world-class team of Bolivian experts with financial support from the Netherlands and Germany to establish certification standards for communities, wood brokers and manufacturers (Carreras, 2015). The SBCBi was tested on 40 forest users (concessionaires, indigenous and community organizations, individual loggers) and the government claims that its standards are consistent with FSC, the Lacey Act and the European FLEGT (Forest Law Enforcement, Governance and Trade) regulations. A review of the standards reveals that the system is analogous to FSC Controlled Wood and only assures the buyer that wood is from a legal source; it can make no legitimate claim as to the sustainability of the production system.

Peruvian companies that buy, transport, process and sell wood products are required to track wood-flow to show that legal sources have been used. Transportation permits, forest harvest records, recovery rates from converting logs to lumber, and logs marked with sequential code numbers are utilized to show authorities that wood is legal. This system attempts to facilitate increased volumes of controlled wood in compliance with the Lacey Act and FLEGT. Mills and harvest operations are inspected by government officials and information incorporated into the national forest database. Although robust on paper, the system is criticized as ineffective on-the-ground (although improving).

Regarding FSC certification per se, independent audits are considered equivalent to the governmental inspections normally carried out by OSINFOR every 5 years as long as OSINFOR provides written approval that the certifier looked at the same issues (Article 147). Regardless, OSINFOR still reviews operations and in fact seems to monitor certified operations more than non-certified.

The certification panorama in Peru is dynamic. In 2014, the country lost the largest single certified operation: Consorcio Forestal Amazónico which went bankrupt. The Ashaninka community, Puerto

Esperanza, recently lost its certification but Oroza is close to gaining Controlled Wood status. Green Gold Forestry recently passed both its forest concession annual audit by SmartWood and its mill Chain-of-Custody certification by Control Union. The Chinese-backed company, Nature Peru, is pursuing Controlled Wood status for over 100,000 ha that it manages in Sepahua.

FSC certification is not a requirement for maintaining a concession in Brazil but in Mexico, all ejidos must achieve independent FSC certification and costs are paid by the government. Despite a history of high-profile international agreements and technical support provided by world class experts in tropical forestry and logging, Guyana has made little progress in the area of certification. The country has, however, worked hard on developing a wood tracking program in compliance with international programs such as FLEGT. This may be due to the fact that most Asian markets do not require certified products (and many Guyanese concessionaires are of Asian ownership). Although Barama had FSC certification at one point, and various companies were engaged in pre-assessments, currently no Guyanese concessionaires or companies are FSC-certified (FSC, 2015). Suriname on the contrary, has made major strides in this area and now has a good supply of FSC-certified wood products available for local and export markets.

## **8. Main successes and positive impacts**

There has been relatively little dissemination of the quantifiable impacts from forest concessions in Latin America. Most results are empirical and either overly glowing or critical, often reflecting more the opinion of the individual making the statement rather than the reality of the situation. This section of the report summarizes the main positive impacts of forest concessions from different perspectives.

### **A. Environmental benefits**

One of the biggest reasons that most tropical forests are under threat is because they are essentially open access resources that are only theoretically protected by governmental agencies that seldom have the resources or motivation to keep out illegal loggers, farmers, drug traffickers and land speculators. One of the biggest successes with concessions has been their ability to simply keep forest standing. This is shown in Guatemala where many parks have been logged, burned and degraded, but concession areas remain intact, land invasions are largely a thing of the past, and fires are rare. Rates of deforestation and fire incidence are lower in managed concessions than in non-managed forests, and oftentimes lower than in protected areas.

A logical question is: how does the establishment of concessions reduce illegal logging? The somewhat counterintuitive answer is: by letting competing economic interests keep each other at bay. In other words, a concession gives a local company or community the legal right and government support to engage in forestry on a particular piece of land to support a business and generate earnings. In countries ranging from Mexico to Brazil, concessionaires have shown their commitment to protecting their source of revenue by keeping illegal loggers and land speculators out; essentially playing the role of the state in keeping forest for individuals and companies with formalized access to timber and non-timber products.

The case of CFA in Peru illustrates this point. Prior to going bankrupt in 2014, CFA kept its 180,000 ha, FSC-certified forest safe from illegal loggers. It also worked with, and supported, the forest management activities of Puerto Esperanza, a bordering Asheninka community. Upon the demise of CFA, Puerto Esperanza gave up its certification status and found a ready buyer for its un-certified hardwoods. People are purportedly logging without permits in what was the CFA concession since no one else is actively present.

In the latter part of the last century, the World Bank had reported that overall, forest concessions had been successful in development terms but less so in promoting sustainable forestry. Research conducted for the present report suggests that this is no longer true since Bolivia, Guatemala, and Mexico (and Brazil to a lesser degree given its more recent entrance into the concession game) have all implemented sustainable forestry on a wide scale and often under difficult conditions.

Accepted technical tools for ensuring sustainable harvest levels and forest integrity are frequently used in Bolivia, Brazil, Guatemala, Mexico, Peru and Suriname, including: forest inventories, pre-harvest censuses, mapping of topographic and hydrological obstacles, marking of seed trees and trees for harvest, directional felling, cutting of vines prior to harvest, and the use of minimum diameter cut levels. Strong technical support from international experts with considerable cross-dissemination has allowed for a massive trial and error, and the subsequent adaptation and application of proven techniques.

For example, from 1996 to 2010, Bolivia had arguably the best forest concession program anywhere in the tropics. Millions of hectares of well managed and FSC certified forests supported a strong wood products industry which generated jobs for thousands of rural people and tax revenues from the export of value-added products. Monitoring and research by respected entities such as The Nature Conservancy indicated that Bolivia's approach to RIL had little impact on biodiversity in harvested forests. Perhaps more than any other country, Bolivia showed that environmentally sound management of tropical forests via industrial concessions could be a profitable and practical conservation approach across a range of landscapes.

Most forest concessions, particularly the certified ones, include strict preservation zones of both unique and representative vegetative communities and wildlife habitat within their boundaries. This is done to achieve financial incentives as in the case of Peru, maintain FSC certification as required by the Guatemalan government, or comply with state monitoring requirements as in Bolivia.

The relationship between FSC certification and forest concessions has been complicated, but many forest concessions have voluntarily or due to governmental obligations, become certified. As explained earlier, the Mexican government requires ejidos to get certified and pays for a large portion of the associated costs. Guatemalan concessionaires are required to achieve certification after 3 years but no assistance is provided. Peru and Bolivia, offer incentives for obtaining FSC and national certified status respectively. Even Brazil's regulations incorporate many aspects of the FSC standards and make the compliance with international standards simpler.

## B. Economic successes

All reviewed countries (with the exception of Venezuela) are home to robust forest product industries and concession systems of various types that provide consistent volumes of tropical

hardwoods important for generating direct and indirect employment, government revenues and development impacts in under-serviced areas. Brazil's volumes are increasing and Suriname maintains stable outputs. The Mexican ejidos and Guatemalan concessions of the Selva Maya have regular volume levels, and even in Peru, the few large, functioning concessions show stable production levels that are critical to local economies.

Concessions seem to foment the diversification of value-added processing that leads to even greater economic benefits to a country. FORESCOM in Suriname makes a range of special dimension products to exacting standards for one European client. CFA in Peru sold broom handles to Holland and kiln sticks and truck beds to the U.S. (and from lesser known species). UTM in Bolivia makes technically sophisticated door products, and EBATA in Brazil uses over 15 species in its production systems.

One of the reasons that the Bolivian model worked well is that the country had a moderately robust manufacturing sector prior to concessions, as well as history of companies operating in large areas with government permission. Bolivian wood products manufacturers did not start from scratch and were willing to embrace the idea of managing forest via a concession model, as did the two progressive Guatemalan manufacturers that are still prospering today. In Peru, to the contrary, companies were reluctant to change and few embraced the new law.

Strong and well-established concession programs with stable revenue generation due to consistent volumes are recognized by financial institutions and funds as solid investment opportunities. In Peru, Agrobanco, a state bank has invested over US\$ 25 million in Amazonian forestry and wood products. Venture capital from U.S. and Canadian investors, as well as European pension funds, and strategic Asian investors have all placed bets on the Peruvian wood products sector. In Guatemala, various funds and state banks have invested with success in the sector (i.e. OIKOCREDIT and Grupo Occidente). Of particular interest is the Guatemalan case where banks have accepted annual harvest plans as collateral due to the fluid nature of such assets.

In several countries, the government has established industry development organizations to support the national forest services and concessionaires on market development initiatives. These have been set up in recognition of the need for concessionaires to improve their margins by harvesting more volume per hectare to develop new products from lesser known species. For example, the FPDMC of Guyana (FPDMC) works closely with all of the concessionaires and the Guyana Forestry Commission to proactively promote new species for export markets. The Amazonian Center for Forest Development (CADEFOR) was a Bolivian non-profit organization set up for similar reasons. Peru's CITE Madera is focused almost exclusively on testing new species, developing new products, and promoting new technologies to increase the productivity of forest concessionaires and manufacturers.

A steady flow of wood leading to a strong forest based economy builds the economic constituency for forest concessions. The Guatemalan and Mexican examples are particularly impressive in showing how the forest products industry reliance on concessions has translated into vocal support for keeping forests standing, oftentimes against plans to convert forests to other uses or usurp community rights to their forest. The long-term stability associated with sustainable volume levels convinces locals that the business is good for their region and consequently, they defend it against outside threats.

Large, well-financed concession directly linked to manufacturing facilities are the most profitable and durable model. The success of vertically integrated models are illustrated by Barama in Guyana, Greenheart in Suriname, Baren and GIBOR in Guatemala and Grupo Wong in Peru. Such operations succeed where others fail precisely because they have a secure supply of wood that they are able to process efficiently and at the lowest possible cost (since they do not need to contract third parties).

### C. Social impacts

Functioning forest concessions as part of a broader land use plan are well regarded by community leaders and the general public in Brazil, Suriname, Mexico, and Peru, and have helped increase societal awareness that cutting a tree is not bad as long as it is done within the context of sustainable management. There is little or no opposition to the concept of concessions as practiced by good concessionaires as long as they contribute to both socio-economic development and a reduction in deforestation rates.

In Brazil, the very small part of the overall Amazon that is dedicated to federal concessions is always located within a broader conservation land-use plan and plays a key part in regional conservation strategies by generating societal benefits not available in strict preservation areas. In Peru, large concession-based companies have supported indigenous federations to purchase land and monitor logging operations (i.e. CFA in the Alto Ucayali region), help employees get identification documents and bank accounts (i.e. Grupo Wong in Madre de Dios), and assist communities in obtaining legalized access to forest resources (i.e. Green Gold Forestry in Loreto).

A less quantifiable but fundamental achievement has been the role that concessions have played in building an industry based on local talent that required many individuals to be trained, change their jobs, acquire new skills and develop new perspectives. The development of human capital is illustrated by Guatemala where the most successful community concessionaires are now able to engage in sophisticated discussions on export taxes and forest policy. In Peru, Ashaninka tribe members now operate heavy equipment and communities that have only recently entered the market economy are now measuring logs, calculating volumes, and monitoring costs. The reduced injuries, more efficient production and improved job opportunities (i.e. skilled versus unskilled, permanent vs. seasonal) for a range of people (i.e. women occupy key management roles with Wong's Maderacre operation and over half of CFA's employees were from local communities including staff in skilled positions) illustrate these types of benefits.

The building of human capacity has happened on both an individual and organizational level with entities such as ACOFOP (Guatemala), Veeduría Forestal (Peru), IBIF (Bolivia) and Reforestemos (Mexico) now playing major socio-political and financial roles. These innovative programs did not exist prior to concessions nor were they planned; they developed naturally as needs changed and concessionaires became more sophisticated.

In most countries, better working conditions for tree fillers and sawmill operators were considered the most important impacts of concessions. Interviews with workers in Brazil, Peru and Guatemala highlighted the improved worker safety of forest workers that were well-trained and outfitted with protective clothing, as well as mill workers that have installations with improved ventilation, safety measures and regular working hours. Concessionaires in Peru regularly use safety equipment, safer



machinery, and provide training to employees. In many countries (i.e. Brazil, Peru, and Guatemala), they usually ensure that workers have full health coverage, have responded admirably in the case of injuries to evacuate employees when necessary, and contract health professionals to attend to staff in forest camps. The widespread use of RIL in Guyana and Bolivia has reduced the likelihood of injury and protective equipment is now standard in concessions committed to this production system.

The granting of a particular area of forest to a private company by the federal government foments long-term investment by the concessionaire who knows that they will reap the benefits of capital improvements over an extended period. This runs counter to the normal attitude and perverse incentive of short term harvest permits and is crucial for building an economic constituency for standing forests. With the exception of Peru, and both Venezuela and Bolivia more recently, concessions in Latin America have served to inspire investment and private development of rural infrastructure, particularly roads, in areas where they are sorely lacking.

Brazilian concessions generated an average of 3.52 direct and 2.66 indirect forestry jobs per 1,000 m<sup>3</sup> of logs harvested for a total of 309 well-paying jobs with benefits for the 50,000 m<sup>3</sup> of annual production from concessions (SFB, July 2014). In the Caxiuana national forest area in northern Pará, the government recently requested bids for three management units totaling 176,000 ha. SFB estimates that roughly US\$ 20 million in revenues will be generated annually as well as 400 jobs, or 50% of all formal jobs in a region characterized with the lowest human development indices in the country (SFB, August 2015).

In Bolivia, while not concessions per se, rural families involved in 14 (of 16) community forestry enterprises supported by TNC as part of the USAID-funded BOLFOR II project benefited from an average 23% increase in income from logging compared to previous years. These same communities also invested forestry profits in basic community education, infrastructure and health projects.

Even in Suriname, despite many weaknesses in the concession system, one cannot deny the importance of the wood products industry to such a small economy. In 2000, forestry and wood processing accounted for 2.5% of Suriname's GDP and provided employment for 4.5% of the entire work force.

While Guyana was heavily criticized for its nontransparent concession system that did not account for community needs, the GFC's Community Forestry Enterprises and Social Development Program established in the 2009 Forestry Act does provide a way for communities to secure rights and benefits from their forests. With the exception of Venezuela, Latin American countries are taking major steps to allow for greater benefits to go directly to local communities.

#### D. Institutional and legal improvements

Landscape level planning processes that exclude lands of traditional community use, potential conflict and/or high conservation values have ensured that areas chosen for concessions succeed in Suriname. Brazil has been particularly proactive in land use planning for large, forested regions such as the Amazon, the Selva Maya and the Guyana Shield. Upfront investment in identifying high conflict zones like illegal gold miners in Itaituba in Brazil, or conflicting resource users in Suriname's Maya Biosphere Reserve have helped ensure that management objectives are not at odds with the site and reduce resource battles. As mentioned previously, when concession management is part of

a broader strategy with a multi-pronged approach by the government, success is likely and impacts in stabilizing immigration, forest conversion and land-holdings are high.

Improving governmental control of harvest operations has not been easy. Having fewer, but larger, areas to monitor improves the efficiencies of agency employees and reduces the focal points of potential illegal logging. A common winning formula has been to form new governmental entities with a modern corporate philosophy led by individuals not tainted with previous involvement in the sector. In Bolivia, ABT's unique approach to a digital tracking system that does not sanction errors but rather continues to work with problematic operators to improve their behavior, in part via public embarrassment and lack of access to financial incentives, shows that there are many ways to attack the issue of poor logging. ABT has a completely different philosophy compared to the previous SFB and has been able to motivated Bolivian professionals of great prestige to return to governmental service.

Related to the above, the role of inspired and hard-working local professionals or "champions" in building concession programs is a notable success for various Latin American countries. Brazil is the most recent example that has established a professional governmental institution with clear rules of engagement (technical and legal). SFB has not been prone to corruption, has many well-qualified and highly motivated individuals interested in changing the forestry paradigm in the Brazilian Amazon.

Guatemala, despite rampant violence and instability, was also able to build a cadre of local professionals ("champions") with sufficient drive and *mística* (i.e. commitment to a cause). CONAP was led in its early years by architects, biologists and business managers without any forestry training. They were, however, committed to instilling a new culture of professionalism and responsibility and together with the international community, built a strong cadre of employees committed to stopping illegal logging and building an effective concession program.

While some countries such as Venezuela, Suriname and Guyana have historically generated low revenues for governmental coffers, other countries have designed systems to ensure financial sustainability of federal, state and municipal governmental institutions, thus using profits to improve governance. In Brazil, fees collected from federal concessions are distributed to the Municipality (20-30%) and State (20-30%) where the concession is located, as well as to a national fund for fomenting forest development (40%).

## 9. Main weaknesses and obstacles

### A. Environmental deficiencies

Across the board, silvicultural systems used in Latin American concessions are based on polycyclic systems whereby minimum diameter limits are determined on a species basis assuming that smaller diameter trees will grow and enter a harvestable size class by the end of the cutting cycle. While conceptually adequate, this approach requires site-specific growth and yield data to adjust projections based on real-world regeneration and mortality information. Guatemala and Bolivia utilize reliable information regularly that has been derived from appropriate research (i.e.

permanent plots in the specific concession) to justify cutting cycles. Although Brazil has established fixed maximum harvest volumes per hectare, it is now beginning to refer more to the results of permanent plots to substantiate modification of these limits when the data justifies doing so.

The standard system may work well for shade tolerant species, but is not necessarily appropriate for light-loving species that require disturbance and higher quantities of light to regenerate well. Due to high costs and low profitability, few if any concessionaires implement silvicultural treatments post-harvest or deliberately open the forest canopy to promote regeneration of high-value species such as mahogany or cedar.

In no cases, are concessionaires implementing treatments designed to meet the regeneration requirements of commercial species. While some interesting research has occurred on how to increase regeneration of key species, there are no examples where silviculture has been implanted on an operational basis over an extended period (i.e. large disturbances for light-loving species, liberation thinning for smaller, shade-loving species).

Many of the expired concessions in Suriname, Peru, Guyana and Suriname are not currently subject to management. Particularly in countries like Peru and Suriname, these areas are either subject to illegal logging or are being converted to agricultural uses. Peru recently granted some expired concessions to new concessionaires but only after many years had passed and the CFA concession remains to this day without any owners. Few countries have working systems to pass expired or rescinded concessions to new owners.

## B. Economics

If there is one common theme across all countries and requested from all interviewees, it is that governments need to dramatically reduce the flow of illegal wood that depresses markets and lowers prices. This is a basic, fundamental role of government. Few concessions are truly competitive in their markets, largely because the government does not fulfill its side of the deal: illegal wood, or more cheaply sourced community wood floods the market and makes it difficult for a concessionaire to make a profit.

Companies in Peru and Bolivia are focusing harvest efforts on native and community forests where requirements are less stringent, costs lower and supervision by the government much laxer than in the concession model. Wood from communities in these countries now dominates the supply and competes unfairly with concessionaires that have agreed to comply with a stringent set of high-cost requirements that are not reimbursed in the marketplace. Unfair competition is still the largest economic obstacle facing concessionaires around Latin America.

Although there are several interesting (but limited) examples of private investors, funds and state banks investing private resources in natural forest management concessions, there is still a lack of interest by banks and financial institutions in allocating resources to natural forest management concessions. It is particularly pressing for communities that depend on up-front payments from buyers. While this issue is common in all community operations, it has been at least partially resolved in Suriname and progress is being made in Peru due to Agrobanco's interest in developing specific financial instruments for communities.

Subsidized technical assistance to communities has usually focused on forestry and environmental issues; the business side of the equation is seldom given attention until later in the process. Business support for both communities and companies is usually minimal in the beginning precisely when key decisions are being made and financial astuteness is most critical. In addition, most NGO and governmental advisors have little or no business experience; at the same time, they are providing training and guidance on business-related affairs. For all of these reasons, many community and company concessions are not doing well financially; they simply do not have the requisite business skills to manage one of the more difficult types of companies to run under challenging climatic, financial and risk conditions.

While concession size is a function of species composition and access (thus smaller areas in Suriname and Mexico are more viable than larger areas in the Amazon), many countries have designed and approved concessions too small to be truly economically viable. In Brazil for example, the federal government offers small and larger areas to companies. Ironically, state governments recognize this: average federal concession size in 2013 was 29,000 ha versus between 50 to 133,000 ha for state concessions. Economies of scale dictate that larger areas with large funding are needed to make most concessions economically viable entities.

The classic problem of low volumes per hectare is noted in virtually every country but actually misses the point. It is not a question of m<sup>3</sup>/ha but US\$/ha in relation to operating costs influenced mainly by road and river access. Suriname and Peru's Madre de Dios region have low harvestable volumes per hectare (< 5-8 m<sup>3</sup>/ha) but due to good road access and high value species they are both quite profitable. Suriname has higher volumes and more expensive transportation. Brazilian concessions regularly harvest 15 m<sup>3</sup>/ha but have very high operating costs (which are dropping as inflation lessens).

Economic returns in countries such as Brazil and Peru have been much less than expected, due in large part to poor inventories and higher than anticipated costs. A recent case in Peru highlights this type of problem when technical assistance from a USAID-funded project applied an untried method for obtaining volume data for a company's upcoming harvest. This method proved very misleading and the field reality had little relation to the census data. The company has cancelled harvesting halfway through the season and is now looking at purchasing raw logs on the (more expensive) open market. Brazil's SFB also found misleading information due to its unique perspective on species needing to be sampled and outsourced professionals. Reducing the cost and increasing the reliability of forest inventories and censuses is one of the most pressing technical needs since all subsequent investment decisions start with the amount of available volume, which can only be obtained with an initial expense that is not reimbursed for up to a year thereafter.

### C. Social impacts

While communities in Mexico and Guatemala have shown impressive progress in terms of managing forest based businesses, Peru, Bolivia, Brazil and Guyana have had much less success. Formalized forest management systems require that communities become more organized and efficient, but with the exception of the aforementioned countries, have not resulted in major improvements yet.

Bolivia has had a particularly surprisingly poor performance in community forestry. While part of this may be due to the remoteness and isolation of many communities which are not even part of the market economy, it is also due to the lack of the government making a concerted decision to support this sub-sector with appropriate tools and incentives. Each sub-sector, be it community, industry, non-timber or other needs constant support that is carefully oriented to its particular needs. Initially Bolivia primarily supported industrial concessions (albeit with some high-profile community projects such as Lomerio) but now, in a complete change of policy, is allowing extremely easy access to the forest for communities but without financial and technical support; thus many are failing. Industrial concessions are being discouraged, no new concessions will be granted, and even the term: “concession” has fallen out of use.

Many criticize subsidies, donor programs and non-profit organizations and prefer that market-based business approaches be used (i.e. having concessionaires and communities pay for at least a portion of the services they receive up-front). There are indeed cases where this has worked fairly well but one should not forget the huge amount of obstacles concessionaires are up against: weather, external markets, drug runners and growers, illegal traffickers of humans, revolutionary movements, violence, illegal loggers, and corruption. It is much easier and cheaper to go with the status quo. Despite the belief that donor organizations keep “inefficient” operations afloat, there is actually inadequate amounts, consistency and focus of pragmatic assistance programs for small operators.

It is a bit surprising in this day and age of Corporate Social Responsibility, Forest Certification and Indigenous Rights that some countries such as Guyana, Suriname and Venezuela have been so slow to incorporate community and social issues into their forest policies. While historical contexts explain much of their delay, other countries are similarly advancing slowly (i.e. Peru) or even regressing (i.e. Nicaragua). Despite high-profile success stories in Latin American community forestry, there is still an unacceptably low rate of uptake in certain geographies and more explicit objectives and tools are needed.

Social impact assessments are common in the mining and pulp & paper industries, but with the exception of Brazil, rare indeed on forest concessions. Government’s need to offer training, protocols and support to carry out social impact analyses on new concession areas.

Despite being governmental property with clearly defined user rights, few governments have the appetite for removing illegal occupants (loggers, farmers, families) from federal or state concessions even when they have the legal right to do so. This is a huge issue since concessionaires invest in an area with the thought that the government will indeed look out for their mutual interests and remove invaders.

#### D. Institutional and legal challenges

Most countries have tried to design, put into operation, and expand concession programs in an overly short period of time. While Suriname and Guyana were the most extreme cases in terms of proactively looking for investors before they even had a solid system in place, Peru also proceeded too quickly despite assistance from international donors and Non-Governmental Organizations. For the case of Bolivia, the assignment of concessions to companies in the past was not done in a transparent manner with clearly defined criteria available for all to see and understand. The lack of

clarity in granting procedures may be part of the reason that the current government feels that concession rights should be provided to communities rather than only companies. To avoid costly mistakes due to inoperative concessions and public criticism that is hard to shake, governments should proceed slowly with pilot concessions that allow them to work out the bugs in the system before expanding on a massive scale.

Governmental agencies often need more resources than they have at their disposal to develop, implement and monitor active concession programs. Countries such as Brazil spent time developing appropriate funding streams whereas other countries like Suriname and Bolivia have been unpleasantly surprised by the lack for revenues available to cover basic costs.

Some countries like Guyana and Suriname traditionally charge little for access rights and government revenues from concessions have been low to non-existent (but have been increasing recently). Others, like Bolivia do not charge communities anything. Brazil presents an unusual approach to covering the cost of developing a concession by charging the winning bidder all consultant costs, and hard expenses related to the forest inventory, management plan, public consultation, mapping and bidding costs. Apart from the argument that such costs are part of the government's mandate for managing public goods, there are no clear guidelines on how these costs are calculated. Fees for access rights should help the government pay for a portion (not all) of the management costs which should also be easy to understand.

While a government has the right to require whatever it wants of a concessionaire since the forest is a public resource, the cost of compliance with such requirements must be incorporated into the concession price. In some countries, pricing seems to have been arbitrary and ad hoc. Venezuela and Bolivia are two examples where the calculations behind concession prices are completely unknown. For the few countries that do explain how concession use fees were calculated, most chose to use stumpage. This is a surprising decision since private timberland investors rarely use this approach and prefer to use the discounted cash flow method to incorporate the element of time into the equation. Establishing a minimum required earning for a concessionaire and the acceptable return that the government needs as calculated via discounted cash flow method would be a more accurate approach for establishing concession fees.

In Brazil, SFB determined its minimum bid price by extrapolating costs and profit margins from areas with available infrastructure, low operating costs and high margins to areas without infrastructure, high costs and low margins. As well, subtler and indirect costs associated with the concession model were not considered and minimum prices were simply too high. SFB determines "market" prices for timber species via surveys that actually reflect the prices of informally sourced, or illegal, wood with a lower cost of production and is not a fair value upon which to base the price of concession-sourced wood. True costs based on a specific piece of land in a particular area must be used to determine concession price.

A common problem is that lack of trained, well-paid and highly-motivated staff at governmental institutions to manage concession programs. Brazil and Peru are two clear cases where more staff and training is needed to allow institutions to keep up with the demands of an increasing work load.

An unusual problem with concessions is that their high profile often prompts more criticism and supervision than that spent on illegal, informal or unsustainable operations. Due precisely to their

formality and legal structure, concessionaires are easy targets and prone to repeated visits by government agencies (unlike many informal operators that conduct business under the screen). Ironically, governments often focus their monitoring efforts on the well-behaved, legal concessions, and allow informal operations to continue with little review.

Another factor which continues to impede the expansion of concession program in countries like Brazil and to a lesser degree Suriname, is that companies must deal with various governmental entities with their respective bureaucratic processes that results in lost time and money. Different institutions do not all agree on priorities and approaches.

For the case of Brazil, bid requirements are onerous, complex, time-consuming and costly, thus precluding the active participation of smaller companies that may not have the staff nor funds to bid on a concession. In addition, regular delays in the final approval of concessions after companies have invested great amounts have negative impacts on revenue stream. For example, two concessionaires in Pará State, GOLF and EBATA, won bids in 2010 but were unable to initiate operations until 2012, two years after winning their bids. Payment structures (i.e. quarterly payments) coupled with excessively expensive performance bonds did not recognize the difficult financial situation facing concessionaires in the early years when they must invest considerable sums in infrastructure without even generating returns the first year. State concessions require much lower bonds.

The importance of supportive policies from the central government was made crystal clear in the Bolivian case when a complete change in philosophy, legal basis, and state involvement led to the destruction of that country's once highly regarded concession system. Venezuela has seen a similar tendency and a precipitous drop in the country's forest concessions. The deletion of the concession concept from the National Constitution was an unforeseen change in policy that clearly showed that the Bolivian government viewed long-term access rights to natural resources by companies as deleterious to the sector, and that communities should be the protagonists of forestry on public lands.

## **10. Lessons learned and factors for success**

There is no shortage of analyses of forestry in the tropics highlighting the multiple deficiencies that need to be resolved. This section of the report attempts to define keys for success in not only designing a concession program (many of the biggest errors occurred at the program conception phase) but also in the nitty gritty details. I have attempted to organize the recommendations by logical sub-themes. I have also deliberately avoided gross generalizations like "resolve land tenure problems", or areas that are more the responsibility of the private sector such as "establish markets for lesser known species". My motivation is to highlight areas that FAO could communicate to governments and support in some fashion or another.

### **A. Design considerations**

Much of the rural economies where concession programs are implemented rely on forest products, chiefly wood. The provision of jobs, taxes, and infrastructure to remote villages from a functioning

concession program will ensure strong local support which is necessary for the concession model to expand. The lack of concessions results in many negative impacts that can be at least partially addressed by a well-functioning concession system. It is important to implement concessions where large tracts of publicly-owned production forests exist to achieve maximum impacts.

At the same time, while governments need to move quickly to counter demographics and land use trends in lawless frontier regions, a massive granting of concessions in record time, such as in the Peruvian experience, usually leads to fiascos. In the Guatemalan model, the government established small pilot concessions (i.e. San Miguel la Palotada) in order to refine methods and procedures. Carefully conducted, initial concessions which lead to modified processes that improve efficiencies are recommended.

Time, lots of money and consistency are the unheralded and seldom mentioned harbingers of success for developing forest concessions. In Bolivia, BOLFOR I and II functioned for almost 20 years and represented millions of dollars of investment in a concerted, scientific approach. USAID's support of Guatemala's MBR took a similar tact that addressed different weaknesses in land management to ensure that concessions were not threatened by outside forces. Mexico had almost 100 years of working with ejidos and then a concerted approach to community forest management since the 1980's. Given the multivariate nature of forestry, improvements in concession systems must be implemented at a large scale, with substantial financial resources, strong technical support, and a focus on the oftentimes forgotten social and financial aspects.

The exclusive focus on one type of access to forest resources, be it through communities (Mexico and now Bolivia) or conversely, industry (Peru and Suriname) can lead to polarization or lack of support when governments change and new political parties are at the helm. On the other hand, the Guatemalan model prioritized communities but also built a system for industrial concessions as well. A dual-pronged approach that stimulates access to forest resources by both communities and companies would seem to be a safer approach for ensuring broad, long-term support of any concession program.

## B. Concession units

While the appropriate size of a concession is a function of species composition, site conditions and access, concession areas must be large enough to offer the advantage of economies of scale. Depending on location, many operations have limited amounts of high-value commercial species to cover the cost of management and harvesting. Many Mexican ejidos have large volumes of low value oak that is not even harvested. Concessions in Ucayali are characterized by high costs and low volumes of high value species, whereas Madre de Dios has much higher volumes of such species and logistical conditions that make it a cost-effective region to operate a concession. Small concessions with poor (i.e. expensive) access are viable as long as the pricing accurately incorporates the financial disadvantages of such an operation. Determining the appropriate forest size should not be an arbitrary nor purely technical decision but rather must be based on a complete financial analysis with accurate cost and revenue information.

As does Brazil with industrial concessions, and Guatemala with community concessions, Bolivia paid great attention to reducing the likelihood of direct resource conflicts due to errors in determining



where to place the concession. Others such as Peru were less cautious and unhappy surprises were found upon entering concession areas: whole communities within concession borders. Evidence shows the importance of resolving or minimizing such conflicts prior to establishing concession boundaries; in the long run, it is much cheaper to establish a clean and low-conflict concession area up-front.

Brazil learned to not promise large concession areas since areas which first appeared good for concessions usually result in much smaller available areas due to competing uses. SFB began toning down its promises once its staff went through the process several times. Since concession areas are seldom as large as one might think before engaging in the due diligence process one must have a sufficiently large planning area to work within similar to Brazil's FLONA approach.

While non-timber forest products are a viable option for increasing returns for many forest dwellers, they seldom form part of forest concession programs per se (with the exception of certain areas in Brazil, Peru and Suriname). Despite strong markets for some products (xate, pimienta and chicle in the Maya forest; and Brazil nut in Peru and Bolivia), concessions have yet to generate significant returns from such products. Even non-timber forest concessions (i.e. Brazil nut concessions in Madre de Dios, Peru) have not served to increase returns for small farmers although they do provide security of access to a resource which may be more important. Rather than being an afterthought, governments should include the management, harvest and trade of non-timber products as a complementary part of their programs (as ABT is now starting to do in Bolivia). Simply allowing others to harvest such products, or not addressing in annual operating plans, is not sufficiently proactive.

### C. Concession process

Brazil uses a very open process where all rules, regulations and results are available to interested parties. A particularly impressive aspect of the Brazilian model is that SFB made changes in its requirements to increase the granting of more, successful concessions and reducing costs without decreasing the quality of the bids and overall forest management. In both Venezuela and Bolivia, concessions were granted to companies without an open process, thus casting doubt that the best price was obtained by the government. Given the desire and need to generate high revenues from concessions, governments should widely publicize concessions that are up for bid and ensure a competitive process that usually results in higher prices.

### D. Concession fees

While volume is not equivalent to profitability, the fact that so little volume is harvested (despite Brazil's much higher volumes) makes it difficult to reduce the impact of fixed costs on per unit profits. In addition, there are cases where a species is profitably harvested in one country and not even utilized or is considered of low value in another. Establishing concession fees based on area rather than volume is one way that governments can at least reduce the cost of harvesting low margin species and incentivize their commercialization.

While some criticize Bolivia's area-based fee to calculate concession payments, this proved easy to administer and less prone to corruption than a production-based system. Suriname used a similar

approach and was also successful. When it comes to concessions, simpler pricing approaches that do not allow for corruption by officials to obtain illegal payoffs seem better than more complex approaches that depend on lots of information (that can often not be corroborated).

At the same time, the price charged should be established via a clear method in order to rebuke charges that low prices were provided to favor large companies. While both Bolivia and Suriname used flat fees, it is unclear as to why specific prices were charged (contrary to Brazil where a minimum bid price is developed).

Concession pricing mechanisms should incorporate real costs from similar operations that include all expenses related to a concessionaire and analyzed from a discounted cash flow approach rather than simply stumpage. Few concession programs have a clear pricing mechanism based on a realistic, modern financial perspective. The approach taken by SFB in Brazil with IFC support is particularly innovative and based on an accurate cost structure and realistic financial projections to determine an appropriate minimum bid price.

Production-based fees should be based in part on prices paid for certain species of commercial interest; these should be derived on an individual species level (or similarly priced groupings). However, this should be only for a pragmatic list of species with true commercial value (i.e. not like the Brazilian model based on > 100 species most of which have little or no commercial value). Fees based on market prices should ensure that the species are truly commercial and that the prices are from the specific region where the wood is commonly sold.

#### E. Concession contracts

It appears that in some countries, contracts are designed to reduce flexibility and offer specificity so that government officials have less leeway to “bend the rules” or favor certain concessionaires. This is problematic in a context characterized by changing conditions and difficult operating circumstances. The length of contracts in Bolivia allows for two 20-year cutting cycles, thus providing the concessionaire with the chance to see and reap benefits from the fruits of his/her labors and investments over two periods (this is rare in concessions and was one reason why the model worked so well). Flexible contracts that allow for justifiable changes and for periods longer than the traditional 20-25 year cutting cycles would increase the appetite for companies to bid on concessions.

#### F. Technical aspects

Contrary to the method espoused in Brazil that has proven problematic, forest inventories and censuses should focus on commercial species likely to be harvested rather than low value species that the concessionaire will probably not extract. Such a reduced species focus will increase the number of plots sampled and initial costs, but it will also reduce risks by providing more reliable information upon which to make business decisions.

In the 1990's many Central American countries utilized simplified forest management plans to reduce the burden on concessionaires and only require truly necessary information. This experience seems to have been largely lost in South America where management plans remain large documents with copious amounts of information often irrelevant for decision makers. Succinct plans that clearly

summarize inventory data, justify cutting cycles and harvest levels, and present operational related information would be a dramatic improvement over the current situation.

Concessions require more than management plans and successful programs develop clear technical guidelines, manuals, procedures and reports that foster both consistency in approaches, efficient monitoring and structured reporting. Assuming that the procedures are based on sound science and are financially viable, their routine implementation will improve the overall forest management of concession areas.

## G. Incentives

Interviewees in all countries concurred that the main incentive to any forest concession program would be: an overall reduction in illegally produced wood with lower cost structures that would allow concessions to compete better.

Costs to concessionaires, in terms of time to approve permits or actual fees charged, must be reasonable in order for a concession program to work. Government institutions should follow the lead of Brazil and Bolivia that have streamlined procedures due in large part to the fiascos (real or perceived) of the early years of their concession programs. The improved wood tracking system in Bolivia is a good example. In the case of Brazil, costs for preparing a concession for bid have fallen by 75%, as have prices for bonds required by the government (i.e. decreasing from 30% of the entire value of the concession in year one to 15%, with payments then increasing to 30% in subsequent years), thus illustrating SFB's understanding that high initial payments coupled with substantial initial investments were not viable for concessionaires. Governments must show a willingness to modify procedures, payment structures and costs once they realize that they are onerous or expensive. Efficient processes are an incentive that governments can offer bidders.

Less successful concession programs are characterized by low profitability due in large part to the need to invest large amounts of money in capital expenditures in remote areas with minimal governmental services. Incentives in the form of tax breaks, fee reductions and subsidies have been successful in countries like Brazil and Peru for reducing the cost of operating a concession and improving the likelihood of profitability. Peru and Brazil have some of the most innovative incentives, granting a discount on price paid based on degree of local and/or vertical integration, and forest certification. These help reduce operating costs and make concessions more competitive with illegal wood.

A pragmatic approach to stimulating investments in concessions would be for the government to share the costs of road-building which are the largest capital expenditure that a concessionaire needs to assume (and which in many cases represents a public infrastructure used by state officials and local communities).

## H. Community buy-in

Related to community involvement, social development and financial profitability, one of the biggest weaknesses is the lack of business acumen and training to run a forestry business well. Weather, communities, diverse landscapes, variable markets, bureaucracy and high capital costs all make running a forestry concession extremely complex and a very low percentage of companies (much

less communities) have the complete suite of needed skills. When direct, pragmatic and useful support is provided on a regular basis as in Suriname and Mexico, a solid core of business people can put value on the concession and keep forest standing.

In the early years of various concession programs, traditional manufacturers were vilified and forest resources were taken from them. This occurred in Mexico and Venezuela, to a somewhat lesser extent in Suriname, and is now occurring in Bolivia. Yet many communities, technical advisors and NGOs have seen the important role played by manufacturers or long-term players in the sector. Their knowledge, capital and installed capacity is key for establishing strategic alliances that take advantage of the respective competitive advantages of both communities and companies.

One way to increase benefits to local communities and foster greater involvement is to charge communities lower access fees to forested areas as was done in Guatemala, Suriname and Bolivia. This is a reasonable strategy given that most communities have less access to capital, information and markets than industrial enterprises. However, when the cost of access is too easy for communities, log buyers and mills may decide to not invest in concessions. In other words, easier regulations and lower costs in community forests coupled with very strict regulations and higher costs in concessions may serve as a perverse incentive that causes companies to avoid concessions.

The role of independent, neutral (i.e. not from the country and not receiving benefits from the implementation of their proposals) technical advisors cannot be underestimated. In Bolivia and Suriname, world-class experts contributed greatly to the structuring of the concession program. In Peru and Brazil, this was not the case and progress has been much slower and prone to problems. In both of the successful cases, local research entities were started by national professionals to conduct studies and disseminate results to the key end-users: concessionaires (Instituto Boliviano de Investigación Forestal – IBIF, and Naturaleza para la Vida – NPV).

## I. Institutional strengthening

There have been varying degrees of success with local governments and their involvement in concession processes. In Bolivia, consultation with ASLs and municipal governments was key to building a robust concession system. Peru's recent decentralization program designed to increase the participation, responsibilities and revenues for regional and municipal governments is so far a mixed-bag without a clear opinion on how useful the new strategy will be. On the other hand, Brazil actually has a state concession program that is more effective than the national program. For state, regional and municipal governments to be able to play a substantive role, clear and logical objectives and installed capacity must be built.

One of the issues with Venezuela and Suriname was that their concession programs did not generate adequate revenues to keep them functioning. Suriname on the other hand, has been able to maintain a robust system with good monitoring and follow-up despite relying on revenues from only 11 concessionaires, donor funds and variable governmental budgets. Governments need to ensure adequate financial resources from not only concession rights and production taxes, but also from the general budget to cover the costs of running a concession program.

A reoccurring theme in interviews, but seldom noted in academic publications is the importance of local, third party agents that provide a "third eye" to reduce the likelihood of corruption and inspire

governmental agencies to root out illegal logging. The effect of honest government, non-profit, or academic staff persons on reducing the overall climate of lawlessness and fostering an ambience of respect for law, investment in long-term enterprises, and transparent business dealings has been shown in Mexico, Suriname and Brazil. Governments would be well-served by fomenting deep ties with donors and non-profits to resolve tough issues like illegal logging and creating an ambience that respects the law.

Where concessionaires have received technical (Bolivia), financial (Suriname) and even marketing (Brazil and Mexico) assistance from the government, and are not only subject to monitoring, fines and time-consuming audits, the overall program seems to work better. Countries where this is not happening (Venezuela, Suriname, Bolivia) have declining programs. In other words, governments should work as partners with concessionaires, not simply as a police force.

Greater autonomy for agencies helps increase the rate of processing and granting concessions. Such autonomy needs to be complemented by efficiently designed processes that do not require the involvement of separate entities with their own objectives, rhythms of work and philosophies. The case of Brazil illustrates the problem with three agencies involved in the process, whereas Suriname shows how the establishment of one semi-independent agency facilitated the development of a working model. There have been various cases where SFB granted a concession after receiving sign-off from ICMBio but IBAMA took over one year to actually issue the permit, thus resulting in economic losses for the winning bidder.

Simply developing a concession program without a corresponding strengthening of institutions with complementary, and well-orchestrated activities led by a main institution does not work. In the case of Guatemala's Maya Biosphere Reserve, the establishment and strengthening of CONAP, SIGAP and CONAMA, as well as fundamental improvements in legislation and regulations (new forestry law and regulations) were necessary for success. Bolivia adopted a similar approach and both cases had a relatively autonomous governmental body with new, motivated and politically strong leadership with the authority and budget to make significant changes in the way forest resources were managed.

Governments should not take a hardline attitude toward stopping illegal land invasions or logging without offering alternatives. For example, in the early 1990's, CONAP had minimal physical presence in the forest and was not experienced in developing workable conservation strategies; it focused on hardline preservation based on strategies used in other countries to minimize and eliminate human impacts in protected areas. As increased numbers of landless farmers and refugees returning from Mexico began entering the forest to establish new communities and revenue generating activities (based largely on non-forest industries), it became clear that a hardline "no touch" approach would not work. Dwellers that depended on logging physically expelled CONAP guards from the communities of El Cruce a Dos Aguadas and El Naranjo in the early 1990's. There are no examples where a unilateral, hardline approach to stopping forest conversion has ever achieved its objectives. What does work is a combination of the carrot and stick approach whereby concessionaires deal with an efficient governmental entity that can also enforce lack of compliance.

As noted by FAST's experience in the field-testing of its Impact Indicators with leaders of the forestry sector in Peru and Bolivia, few companies track information related to how sustainable forestry as practices in concessions affects local populations. FAST consultants note that logically, different-

sized companies have different degrees of impacts on workers, communities and the forest, and would thus need different approaches to monitoring impacts. Clear quantification of impacts would prove very useful to showing local governments, non-profits and government officials all of the “hidden” benefits from forest concessions. Examples of these positive impacts include:

- formal remuneration in terms of salary (at minimum wage), retirement plans (i.e. Peru’s AFP system), medical insurance, and food;
- payment methods (i.e. CFA required individuals to have bank accounts so that money would not be lost, misplaced or misspent in the field);
- living quarters and sanitation (i.e. Wong’s FSC-certified facilities are much better than most)

## 11. Final reflections on the future of concessions

The biggest detriment to the proper functioning of forest concessions is the low cost and high volume of illegally or informally sourced wood that unfairly competes with higher cost, concession wood in the marketplace. The regular invasion of forest lands by transient communities results in forest conversion to agriculture and the flooding of the market with cheap wood that makes it difficult for a legal operator to compete against due to higher costs.

The same holds true with legal wood from smaller areas that do not incur the same costs as concessionaires. In most countries, despite campaigns against illegal logging, highly publicized press articles, high level memos signed between different governments, and the fining of concessions that do not comply with regulations, informal, non-concession forestry (often illegal) is the main production system.

Initiatives such as FLEGT do not matter to most wood manufacturers since they sell locally or to markets such as Mexico, the Caribbean or China that are not interested in wood origin. Corruption is so ingrained in the system and illegal or informal wood is so easy to obtain with falsified papers that there is little motivation to obtain concessions: it is simply cheaper and easier to buy elsewhere. The trend toward local management of concessions (i.e. Peru and Bolivia) and the establishment of local forests whereby unclaimed land becomes the jurisdiction of local municipalities, will likely lead to increased harvests and additional, low-cost wood flooding the market.

There are two land uses that commonly threaten the viability of forest concession systems to different degrees depending on the country:

- Agriculture, particularly palm oil plantations, continues to expand, oftentimes in state or community lands which are supposed to remain in forest cover. Few governments have the resources or qualified staff to effectively control the millions of hectares of productive forests that are not under management.
- Reforestation is being promoted by several governments and is becoming a priority. While the planting of trees on degraded land is positive, the focus of the government’s limited resources on plantations versus natural forests suggests that concession programs may languish.

Natural forest concessions appear to have become a lower priority for Peru's forest service which is now focused on timber and agricultural plantations. Despite the active role made for local government in concession management, there has been little discussion of how concessions can contribute to social and economic development in the Amazon, climate change, regional planning initiatives, or Lacey Act and FLEGT-related initiatives. This is particularly ironic given the potential impact that could result from a well-managed concession program. For example, assuming that all BPP were allocated to timber concessions, that 85% of the 16.9 million ha of BPP is actually productive, and that a 25 year cutting cycle is used, Peru could harvest 574,600 ha annually and produce from 1.7 to 11.4 million m<sup>3</sup>/year. A realistic yet optimistic volume assumption is 5 million m<sup>3</sup> (assuming 8.7 m<sup>3</sup>/ha, 40% recovery, US\$1/bf) which could generate US\$ 800 million in annual revenues from lumber export sales.

Carbon markets pay so little for credits that they do little to foster investment in concessions. One positive development from the COP 21 meeting held in Lima in late 2014 is that Agribanco, the Peruvian national bank, is motivated to become a "green" bank and has prioritized forestry as an area of action.

It is unusual and somewhat illogical that concessionaires responsible for protecting a forested area from invasions, fires, and deforestation do not have access to carbon rights as is the case in Brazil and purportedly Bolivia. Although the carbon market is not particularly desirable at present, it would be logically consistent for concessionaires to be able to generate revenues from this product.

Despite the close link between concessions and certification, many note that certification has not provided many tangible benefits and rather than generating greater profits, may even cut into margins due to higher costs associated with sustainable management. It is difficult to determine if an improved price is due to species rarity, product quality, client relationship, or certification. Certain species (mahogany and Spanish cedar) in certain markets (Spain and U.S.) for certain products (guitar parts and home building) from particular countries (Bolivia and Guatemala) have obtained prices more favorable than most. Although FSC has opened up better export markets for some lesser known species, one cannot claim that certification has passed a cost/benefit analysis. FSC certification in particular, has not met expectations of government or producers and an overall feeling of disenchantment exists.

## Annex 1: References

- Autoridad de Fiscalización y Control Social de Bosques y Tierra (ABT). 2011. Informe Anual 2010 y Balance de la Década. Santa Cruz, Bolivia, 2011.
- \_\_\_\_\_. 2015. abt.gob.bo. November 14, 2015. Web.
- Alvez, Marcus V. June 11, 2013. Forests for Future Generations – Public and Private Responsibility for Sustainability: Collaborative approach of public and private sector for sustainable development of the Brazilian Amazonia. Presentation made in Berlin, Germany.
- Azevedo-Ramos, Claudia, Jose Natalino Macedo Silva and Frank Merry. May 2015. The evolution of Brazilian forest concessions. *Elementa: Science of the Anthropocene*. 3: 000048.
- Barama Company Limited. Company Overview. Baramaguyana.com. November 13, 2015.
- Blate, Geoffrey M., Francis E. Putz and Johan C. Zweede. 2002. Progress towards RIL adoption in Brazil and Bolivia: driving forces and implementation successes. in *Applying Reduced Impact Logging to Advance Sustainable Forest Management*. Asia-Pacific Forest Commission. International Conference Proceedings, FAO. Bangkok, Thailand.
- Bray, David Barton, Leticia Merino-Perez, and Deborah Barry. 2005. *The Community Forests of Mexico- Managing for a Sustainable Landscape*. University of Texas Press. Austin.
- Bulkan, Janette. 2014. Forest Grabbing Through Forest Concession Practices: The Case of Guyana. *Journal of Sustainable Forestry*, 33:407-434.
- Camara Forestal de Bolivia (CFB) webpage, October 23, 2015 ([www.cfb.org.bo](http://www.cfb.org.bo))
- Brazil. Webpage. August 25, 2015. Lancado edital para concessao florestal de Caxiuana. [www.florestal.gov.br/noticias-do-sfb/](http://www.florestal.gov.br/noticias-do-sfb/)
- Carreras, María del Carmen. 2015. Sistema Boliviano de Trazabilidad y Certificación de Bosques e Incentivos. Presentation. WWF. Quito, Ecuador.
- Colom, E. 1996. Definición y análisis del marco legal para concesiones de productos forestales no maderables en la Reserva de la Biosfera Maya, Petén, Guatemala. CATIE, Turrialba, Costa Rica.
- Congreso de la República de Guatemala. 1996. Decreto 101-96. Guatemala.
- Consejo Nacional de Áreas Protegidas (CONAP). 1994. Normas de adjudicación de concesiones. Guatemala City, Guatemala.
- CONAP. 1996. Plan Maestro: Reserva de la Biosfera Maya. CATIE, Turrialba, Costa Rica.
- CONAP Departamento de Manejo Forestal Región VIII. No date. Conceptos, terminología y lineamientos en la aplicación de la intensidad de corta, Peten.
- FAO. 2005. Brazil Country Report. Status of Tropical Forest Management 2005. Rome, Italy.
- FAO. 2010. Global Forest Resources Assessment 2010 Suriname-Country Report. FRA2010/199. Rome, Italy.
- FRM Brazil. 2012. Analysis of Anthropogenic Pressures, Report for IFC. Belem, Brazil.
- Fundación Naturaleza para la Vida, Agosto de 2001, Fomentando el cumplimiento de las precondiciones y condiciones de la certificación del FSC de las concesiones forestales comunitarias de: Chosquitan, Suchitán, Uaxactún, Carmelita, Unión Maya Itzá y Sayaxche en



- Petén, Guatemala: Informe Taller- Determinación de Intensidad de Corta y de Criterios para Arboles Semilleros, Petéén, Guatemala.
- Gonzalo Sanchez de Lozada. 2015. en.wilkepedia.org. November 14, 2015. Web.
- Guzman, Rudy and William Cordero. Poster 201: Bolivian Sustainable Forestry Management Project (BOLFOR Project). metla.fi. November 14, 2015. Web.
- Gretzinger, S. P. 1995. El manejo forestal comunitario en la selva Maya: La perspectiva campesina. CATIE, Turrialba, Costa Rica.
- . 1996. Análisis financiero del manejo forestal comunitario en la Reserva de la Biosfera Maya: Caso de la cooperativa Bethel. CATIE, Turrialba, Costa Rica.
- . and J. R. Carrera. 1996. Procedimientos simplificados para el otorgamiento de concesiones forestales en la Reserva de la Biosfera Maya, Guatemala. CATIE, Turrialba, Costa Rica.
- .Gretzinger, S. P., M. E. Salazar, M. A. Manzanero, J. R. Carrera, R. A. Morales, and G. I. Pinelo. 1993. Plan de Manejo Forestal Cooperativa Bethel, La Libertad. Conservation International, Flores, Guatemala.
- Guyana Forestry Commission. 2015. Community Forestry Enterprises and Social Development Programme. Presentation.
- Guyana Population Clock Countrymeters.info. November 12, 2015. Web.
- Guyana Profile. Forbes.com. December 2014. Web.
- Hodgdon, Benjamin D., David Hughell, Victor Hugo Ramos, and Roan Balas McNab. 2015. Deforestation Trends in the Maya Biosphere Reserve, Guatemala 2000-2013
- Instituto EKOS. January 2014. Metodologia de Asignacion de Concesiones Privadas Flona Itaituba: Pará, Brasil. Ernst Basler + Partner.
- International Finance Corporation (IFC). August, 2014. Parceria IFC-BNDES-BID e Serviço Florestal Brasileiro para estruturação de concessão florestal para Flonas Itaituba I & II. Power Point Presentation, Brasília, Brazil.
- \_\_\_\_\_. August 2014. Memo: Reunião de precificação entre IFC, BNDES e SFB. Brasilia, Brazil
- International Tropical Timber Organization (ITTO). Guyana. itto.int. November 12, 2015. Web.
- ITTO. Brazil Country Profile. itto.int. 2015. Web.
- ITTO. Suriname. itto.int. 2005. Web.
- ITTO. 2005. Status of Tropical Forest Management – Venezuela. ITTO int. November 13, 2015. Web.
- Jaramillo Velia. April-May 2015. Índices de Progreso Social: No Todo es PIB. E&N Estrategia & Negocios.
- Lozada et al. 2012.
- Junkin, Ruth. 2007. Como superar los obstáculos que impiden a la silvicultura en pequeña escala acceder a los servicios financieros: el caso de las empresas forestales comunitarios de Peten Guatemala. FAO, Rome, Italy
- Louman, Bastian. Fernando Carrera, Javier Arce, Lincoln Quevedo. No Date. Science and Forest Concessions.

- Map 7. Guyana. Forestsmonitor.org. November 12, 2015. Web.
- Ministerio do Meio Ambiente. Servicio Florestal Brasileiro (SFB). August 2015. Edital de Licitacao para Concessao Florestal. Concorrência # 01/2015. Florestal Nacional de Caxiuana.
- Ministry of Natural Resources Suriname/FAO/Netherlands, Suriname Forest Management Act of 1992. January 2002.
- Mollinedo, Ana del Carmen, José J. Campos, Markku Kanninen, Manuel Gomez. 2001. Beneficios sociales y económicos del bosque en la Reserva de la Biosfera Maya, Peten, Guatemala. *Revista Forestal Centroamericana*. 34: 57-60. CATIE. Turrialba, Costa Rica.
- Morales Aquilar, Reneer. Nov. 2013. Análisis de la oferta maderable de los POA's 2014 de las Concesiones Forestales de la RBM: Una Oportunidad para Aumentar los Ingresos a las Empresas Forestales de Peten. Peten, Guatemala.
- Navarro Monge, Guillermo A., Oscar J. Santamaría Gutiérrez, Luis C. Vargas Bolívar and Víctor Milla Quesada. 2014. Análisis del comercio internacional de productos de madera y su gobernanza administrativa: Región de América Central y la República Dominicana 2000-2011. UICN. San Jose, Costa Rica. *National Geographic* (vol. 176 no. 4, October 1989).
- NRPF. 2015. National Registry of Public Forests 2015.[Mapa Impresso Tamanho A1]. Brasilia. Brasil.
- OSINFOR- <http://www.osinfor.gob.pe> (June 27, 2015).
- Population Growth (annual %) in Guyana. Tradingeconomics.com. November 11, 2015. Web.
- Primack, Richard B., David Bray, Hugo A. Galletti, and Ismael Ponciano, 1998, *Timber, Tourists, and Temples: Conservation and Development in the Maya Forest of Belize, Guatemala and Mexico*. Washington, D.C.
- Chayax Huex, Reginaldo, Feliciano Tzul Colli, Carlos Gomez-Caal and Steven P. Gretzinger: *The Bio-Itza Reserve: History of an Indigenous Effort to Conserve the Itza Maya Community of San Jose, El Peten, Guatemala*.
- Gretzinger, Steven P.: *Community Forestry Concessions: An Economic Alternative for the Maya Biosphere Reserve in the Petén, Guatemala*.
- Ponciano, Ismael: *Forestry Policy and Protected Area Management in the Petén, Guatemala*.
- Public Certificate Search. [info.fsc.org](http://info.fsc.org). November 13, 2015.
- Rodriguez Macal, Virgilio. Guayacán. Guatemala City, Guatemala 1992.
- Sabogal, Cesar. 2010. Manejo forestal y la experiencia con concesiones en Sudamérica. Presentation Power Point.
- Salazar, M. E., and S. Ruano. 1995. Desarrollo de un modelo de manejo forestal comunitario en las cooperativas de la región del Usumacinta, estudio de caso: Cooperativa Bethel. Centro Maya, Santa Elena, Guatemala.
- Schwartz, N. B. 1990. *Forest Society: A Social History of Petén, Guatemala*. University of Pennsylvania Press, Philadelphia.
- SERFOR- <http://www.serfor.gob.pe> (June 27, 2015).

- Servico Florestal Brasileiro (SFB). 2013. Fichas para Parametrizao de Indicadores para fins de Classificacao e Bonificacao do Edital de Concessao Florestal da Flona do Crepori. Edital da Concorrencia # 01/2013. Anexo 15. Brasilia, Brasil.
- SFB. May 2014. Perfil do setor madeireiro da Amazonia. Brasilia, Brasil.
- SFB. July 2014. Boletim Economico das Concessoes Florestais. Year 2. Edicion 4. Brasilia, Brasil.
- SFB. August 2015. Lancado edital para concessao florestal em Caxiuana. florestal.gov.br. October 18, 2015. Web.
- Sizer, Nigel and Richard Rice. 1995. Backs to the Wall in Suriname: Forest Policy in a Country in Crisis. World Resource Institute.
- Stanley, S. A., and S. P. Gretzinger. 1996. Timber management of forest patches in Guatemala. Pages 343–365 in Forest Patches in Tropical Landscapes, J. Schelhas and R. Greenberg, eds. Island Press, Washington, D.C.
- Synnott, T. 1994. Concesiones de manejo forestal para la Reserva de la Biosfera Maya, Petén, Guatemala. Technical Report, Tropical Forest Management Trust. Gainesville, Fla.
- Suriname Population Clock. Countrymeters.info. November 13, 2015. Web.
- The Nature Conservancy (TNC) webpage, October 21, 2015 ([www.tnc.org](http://www.tnc.org))
- Van der Hout, Peter. 1999. Reduced Impact Logging in the Tropical Rain Forest of Guyana: Ecological, Economic, and Silvicultural Consequences. Tropenbos – Guyana Series 6. Georgetown, Guyana.
- Walton, Elisa. 2014. Guatemala conserves the past while building the future. Frontlines. USAID. Online Edition.
- [www.boliviapanda.org](http://www.boliviapanda.org), January 23, 2015. Bolivia lanza un innovador Sistema de certificación forestal.
- World Wildlife Fund (WWF) webpage, October 20, 2015 ([www.wwf.org](http://www.wwf.org))

Summary Table of Latin American Concessions

	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Venezuela
Area (000 ha)	53.500	463.000	67.992	3.657	15.200	14.758	4.000
Population (000)	38.611	310.000	18.821	1.536	12.200	11.300	2.000
Area (ha)	8.987	100.000	5.513	450	6.850	4.482	1.000
Public	72%	67%	28%	42%	80%	77%	
for	23%	32%	29%	29%	56%	40%	
ions	2.107	1.300		450	6.500	1.090	
In Characteristics							
	Federal	Federal / State	Federal & Regional Joint	Federal	Federal	Federal (no collective ownership allowed)	Federal (no forest (govt))
	1 agency (ABT)	3 federal agencies: SFB, ICMBio, IBAMA At a State level: Ideflor-Bio and SEMAS	1 Federal agencies (SERFLOR / OSINFOR) and regional government	1 agency (CONAP)	1 agency (Guyana Forestry Commission) working with Forest Products & Development Marketing Council (FPDMC); both the Mines and Survey departments may issue permits for conflicting uses over certain forest	1 agency (MinROGB - Ministry of Physical Planning Land & Forest Mgmt)	1 agency (Ministry of Environment and Natural Resources but controlled by Agricultural Mining MARN Forest management central)

	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Venezuela
					areas		
	Improve quality of life via sustainable forestry, equitable distribution of benefits and investment	Rural economic development by forest industry with a sustainable flow of raw materials to meet strong internal demand for wood products	Promote rural development via sustainable forest management on non-indigenous & non-conservation lands	Protect conservation values of the Maya Biosphere Reserve by stimulating rural economic growth by giving local communities option to sustainably co-manage federal resources for profit	Conserve, protect, manage & utilize forest while maintaining productive capacity; Ensure optimum sustained yield of forest products while maintaining and improving environment, and increasing socio-economic benefits for communities	Forest Mgmt Act established single authority to implement balanced policy to achieve sustainable forest management and strengthen the wood products industry	Complete categorization of different objectives despite history of management regulations; various diversification of community maintenance and sustainable development; participatory
	Industrial / Indigenous (ASL) / Community (TCO)	Industrial (FLONAS)	Industrial / Reforestation / Eco-tourism / Conservation	2 Industrial / 11 Community	Industrial / Community (Social Development Program initiated in 2000 but not concession program per se)	Industrial Concessions / Community - HKVs / Subsistence - ICLs	Industrial private joint venture No concession operated little of recognition
ent	Area	Area	Area	Area	Area	Presumably Area	Presumably

	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Venezuela
	Dramatic decline due to policy favoring communities	Incipient / Growing as system weaknesses have been improved	Moderately established (many granted - minority functioning / slow growth)	Well-established / Stable	Well-established / Stable	Declining	< 40%
	Timber / Non-timber (increased interest in full range of forest products)	Timber / Non-timber / Ecotourism No Carbon Credits	Timber / Non-timber / Eco-tourism / Carbon	Timber / Non-timber / Eco-tourism / Carbon	Timber (strong markets and government support) / Few NTFPs (palmhart, rattan, latex, tannins)	Primarily TTh imber	Timber NTFPs (Liana heart)
raits							
	Conservation based, landscape focus to determine where concessions fit	Commercial value and operational obstacles to determine concession location per concessionaire's interest	Determine suitable areas for forest production without conflicts in coordination with regional governments	All non-protected areas within the borders of the Maya Biosphere Reserve of interest to communities and industry	Commercial value for industrial concessions determined by govt / Proximity & traditional use for community applicants	Unclear; presumably based on commercial species and operational constraints; very costly to manage areas due to poor infrastructure and low yields	South River in region forest not be establi
10	73	41 (Federal) / 50 Para State	14	35 (Community) / 66 (Industrial)	6,600 (Community) / Various area size classes (Industrial): TSA- 75,000 ha average (50-100k); WCL: 15,000 ha average; SFP: < 8,094 ha; Exploratory Permits: 135,000 ha average	Maximum size: 150,000 ha with 25,970 ha average in 2003 / Smaller concessions common; cutting licenses < 5,000 ha;	155,85 averag Conces 5,000 h Logging 5,000 h

	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Venezuela
Rotation	40	20-40 years	40	20 year average	TSAs for areas > 24,000 ha: 20+ years; WCLs for areas 8,000-24,281 ha: 3-10 years; SFPs for areas < 8,094 ha: annual; Exp. Permits: 3 years	1-20 years (periods > 25 recommended by govt) for concessions; Collective wood-cutting permits (HKVs) and incidental cutting licenses (ICLs) for shorter periods	20-40 years (average)
Species	Not determined by government since fees are area based	Determined by SFB to serve as basis for pricing	Not determined by government since fees are area based	Determined by CONAP but concessionaire has right to harvest those of interest	1953 Forest Act specified MDC of 34 cm but 2009 Forest Bill does not specify; species selected by concessionaire; 30 commercial species w/ 5 highly commercial	5 major species (50 considered commercial by govt)	12 species (13 m3/ha, 20 species considered commercial)
Harvesting Process	Minimum 20 yr CC with average harvested volume of 0.54 m3/ha	25-35 yr CC determined by standard allowable volume/ha with maximum of 0.86 m3/ha	Minimum 20 yr CC with average harvested volume of 1.5 m3/ha	25-35 yr CC with 30 year average with average harvested volume of 0.1 m3/ha	< 60 year CC with maximum of 20 m3/ha (extracion is usually much less)	Unclear	> 40 years (MDC per regulation)

	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Venezuela
	Company conducts research to make proposal to government including management plan	Government conducts preliminary inventory, and establishes minimum price for applicants to bid on	Government prepares inventory and basic information for which applicant prepares proposal	Government prepares all studies and requests bids for industrial concessions; communities justify area of interest based on historic use	Community: letter from group to GFC, asset registration, identification of available area, site visit, competitive bid; Industrial: public notice from government twice annually, provision of technical documents, competitive bidding for multiple interests	Unclear / Award by request vs. Award by bidding	Unclear public
	Government requested proposals but did not conduct bidding process; concessions granted to highest bidder	Highest price over minimum stipulated price that meets environmental, social and production efficiency criteria	Highest price was main consideration with inadequate review of capacity	Historical use, community approval, operational capacities and track record	Unclear approval selection criteria; Community use is legally a priority but is not promoted or supported in reality	No performance, professional or track record criteria	Not tra
	Formally established company with proven technical and financial capacity / commitment to complying with laws	Formally established company with technical capabilities, commitment to social requirements, sound financial standing and without illegal precedents	Financial capacity and approved bid document	Formally established Guatemalan company with proven technical and financial track record	Communities: Logging association, asset registration, available area, bank account, recorded minutes, payment of area-based fees; Industrial: approved mgmt plan (> 5 years) & annual harvest plan, proven ability	Lax requirements for ICL (incidental cutting licenses / HKV (communal wood-cutting permits); foreign or national allowed	Unclear Venezuela: National: Management based on of communities by professional foresters enrichment plantations operat



	Bolivia	Brazil	Peru	Guatemala	Guyana	Suriname	Ve
					in forestry & processing; EIA & Social Impact Assessment, Forest Inventory, Business Plan		
	No guarantees required	Substantial guarantees required based on value of annual harvest	Bank note equal to 15% of the value of estimado harvest which results in a value 40-80% of concession value	Communities deposit 1% of the value of the contract whereas industries pay between 40-60%.	Unclear	Unclear	Unclea
	No payments from communities / Regular area based payments for industrial holdings	Highest bid price per cubic meter	Highest bid price per m3 converted to hectares	Consistent rate for communities / Variable rate for industry	Pricing per market rates from FPDMC and GFC; historically very low (\$0.20/ha/yr); tax exemptions on machinery imported for logging and processing.	Historically very low volume & area based payments have increased; export taxes on wood products	Unclea
	Robust and constant for concessionaires / Variable for communities	Moderate	Moderate and improving w/ focus on concessionaires versus communities	Robust and constant	Annual field inspections prior to renewal of subsequent year's harvest plan; log tracking via 26 forest stations and tags	Minimal	Minim: existen



